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THE

NORTH AMERICAN
MEDICO-CHIRURGICAL
REVIEW.

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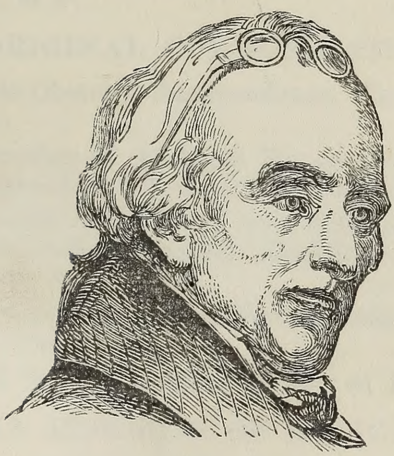
Occidet qui non Servat.

VOL. III.



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THE NORTH AMERICAN MEDICO-CHIRURGICAL REVIEW.

JANUARY, 1859.

Analytical and Critical Reviews.

Art. I.—*On the Diseases, Injuries, and Malformations of the Rectum and Anus, with remarks on habitual Constipation.* By T. J. Ashton, Surgeon to the Blenheim Dispensary, Fellow of the Royal Medico-Chirurgical Society, Member of the Pathological Society of London, Corresponding Fellow of the Pathological Society of Montreal, Member of the Council of the Harveian Society, formerly House-Surgeon to University College Hospital. Second edition, octavo, pp. 396. John Churchill: London, 1857.

The first edition of this work appeared in 1854. This second edition differs but little from its predecessor; some additional cases have been introduced in further illustration of several of the subjects, particularly of imperforate anus and rectum, which subject had not been sufficiently noticed in the other; in some of the chapters a few paragraphs have been inserted, and in one of them, the ninth, a few have been omitted. Three figures, moreover, have been introduced, for the purpose of representing the speculum which may be used in rectal examinations. The author says, and we believe with justice, "That he has found no reason to alter the arrangement of the contents, nor, as a result of more extended experience, to deviate from the principles of treating the various diseases propounded in the first edition."

The notices of this publication in numerous medical journals, and, in fact, the rapid exhaustion of its first edition, show the high estimation in which it is held by the medical profession. It well deserves its reputation, for it is undoubtedly the most complete work in the English language upon the subject of which it treats.

But the reputation of this work does not belong entirely to Mr. Ashton, and in appropriating it altogether to himself, he takes what he cannot rightfully claim. Much of the "good name" he bears he has taken from another, and, what adds to the greatness of the offence, great as it already is, from a deceased medical brother. Such a charge as this is most serious; we make it with reluctance, but, at the same time, without hesitation.

In several medical journals, but particularly in the *American Journal of Medical Sciences* for April, 1858, it has been noticed that Mr. Ashton is under great obligations to the treatise of the late Dr. Bushe, of New York; but the extent of these obligations has never been sufficiently known, or never properly pointed out. One journal seems to think that it is quite proper, indeed quite commendable, in Mr. Ashton, to appropriate to his own use the labors of another. The *British and Foreign Medico-Chirurgical* for July, 1857, says, "We have heard it objected that it (his work) has been too much based upon the work of the late Dr. Bushe; but even if this were true, which we do not think it is, it would in our eyes constitute rather a merit than a reproach." We must look upon this as a very strange, not to say a very loose, way of regarding such a matter.

All that Mr. Ashton says in regard to his indebtedness to Dr. Bushe's work is this:—

> "When the treatment of these affections first occupied my attention, I greatly felt the want of a book to which I could refer for information on some of the more obscure and difficult cases. In the systematic works on surgery I found the subject but superficially treated; and though several excellent monographs have been published, the authors have confined their observations to certain of the affections only; among these stand pre-eminently the writings of Mr. Pott, Mr. Copeland, and Mr. Syme. The treatise of Dr. Bushe, of New York, who unfortunately died soon after its publication, is the only one with which I am acquainted that embraces the whole subject, and from it I have gained much valuable information."

We quote the whole passage that the reader may judge for himself, with correctness, of the exact amount of indebtedness acknowledged.

Dr. Bushe's work, which is entitled "A Treatise on the Malformations, Injuries, and Diseases of the Rectum and Anus," the same as that of Dr. Ashton, the order of the subjects being transposed, appeared in 1836. In his advertisement the author states that from pressure of business and declining health he had been more than a year in correcting the proof; and he adds that he hopes to bring out another edition, in which the mistakes and omissions of the first should be corrected. He died, however, soon after its publication; *unfortunately*, Mr. Ashton says; if so, it is more true of Dr. Bushe than of himself.

It is very difficult, indeed in a limited space it is at times impossible, to show how far one author is indebted to another. In some instances, as in that of M. Pró, of Lima, about whose plagiarism from Mr. Thompson the English journals are making so much ado, where for several pages the original is copied word for word, nothing is more easy;* but when the copier has acted with more cunning, and in a whole work, has changed the order of chapters, altered the arrangement of paragraphs, incorporated long footnotes in the text, etc. etc. the task of showing the extent of the plagiarism is very difficult, however satisfied the reviewer may be himself of the truthfulness of his opinion. We shall endeavor, however, in this case, as we are indeed bound to do, after what we have said, to point out instances of plagiarizing on the part of Mr. Ashton, in sufficient number and of sufficient importance to justify all that we have said.

To make an accusation of this kind is very disagreeable to us, and the task of proving its correctness is by no means a pleasant one. It was impossible, however, for us to notice Mr. Ashton's book without making it, and having made it, we must justify it. Although in the eyes of some, it may, alas! be a merit rather than a reproach to borrow without acknowledgment from the works of others, in the eyes of many such conduct is considered most reprehensible. M. Pró, as we have said in our note, was dealt with very severely, and between M. Pró and Mr. Ashton we see a great difference in respect to skill, but no other—unless it be that of country.

Let us commence our task by comparing the list of contents in the two volumes.

In Dr. Bushe's it is as follows :—	In Mr. Ashton's it is as follows :—
1. Anatomy of the rectum.	1. Irritation and itching of the anus.
2. Functions of the rectum.	2. Inflammation and excoriation of the anus.

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* In this much talked of plagiarism twenty-three pages of M. Pró's Memoir were copied, translated word for word, as stated, from Mr. Thompson's work. The English journals expressed great indignation, and the French Society of Surgery, of which M. Pró was a corresponding member, expelled him, and sent a representation of the whole affair to the Medical School of Lima, where he was professor, and demanded the notice of his expulsion in all medical journals. It is somewhat worthy of remark that the English journals warn continental writers not to dare to steal from English productions any longer, literary intercourse, they say, is too great, they must certainly be detected, when the plagiarism was first pointed out in this country, in the *American Journal of Med. Sciences* for April, 1858, as Mr. Thompson warmly acknowledges in a private letter to the writer of the review in which the matter is noticed.

3. Malformations of the rectum and anus.	3. Excrescences of the anal region.
4. Foreign bodies in the rectum.	4. Contraction of the anus.
5. Inflammation of the rectum.	5. Fissure of the anus and lower part of the rectum.
6. Inflammation and excoriation of the anus.	6. Neuralgia of the anus and extremity of the rectum.
7. Inflammation of the rectum and anus arising from the application of gonorrhœal matters.	7. Inflammation of the rectum.
8. Fissure of the anus.	8. Ulceration of the rectum.
9. Neuralgia of the extremity of the rectum.	9. Hemorrhoidal affections.
10. Spasmodic contraction of the sphincter ani.	10. Enlargement of the hemorrhoidal veins.
11. Ulceration of the rectum.	11. Prolapsus of the rectum.
12. Venereal ulceration of the rectum.	12. Abscess near the rectum.
13. Affections called hemorrhoidal.	13. Fistula in ano.
14. Enlargement of the hemorrhoidal veins.	14. Polypi of the rectum.
15. Prolapsus of the rectum.	15. Stricture of the rectum.
16. Relaxation of the anus.	16. Malignant diseases of the rectum.
17. Relaxation of the anus with invagination of the mucous membrane.	17. Injuries of the rectum.
18. Itching of the anus.	18. Foreign bodies in the rectum.
19. Excrescences about the anus.	19. Malformations of the rectum.
20. Polypi of the rectum.	20. Habitual constipation.
21. Abscess near the anus.	
22. Fistula in ano.	
23. Contraction of the anus.	
24. Stricture of the rectum.	
25. Carcinomatous degeneration of the rectum.	

From these lists it will be seen that Mr. Ashton's book does not contain any separate chapters upon the anatomy and functions of the rectum, upon inflammation and excoriation of the anus, upon inflammation of the rectum and anus arising from the application of gonorrhœal virus, upon relaxation of the anus, and upon relaxation of the anus with invagination of the mucous membrane, while it contains one that Dr. Bushe's does not, upon habitual constipation. The other chapters are upon the same subjects; their order, however, being altered.

Let us now take the first chapter of Mr. Ashton's work, and see how much it resembles the nineteenth chapter of Dr. Bushe's, which is upon the same subject.

Dr. Bushe says :—	Mr. Ashton says :—
"The itching is often very distressing on going to bed, and not unfrequently prevents sleep for several hours;—the skin about the anus becomes thick, dense and furrowed;—the furrows assume a radiated direction, and converge in the anus; they vary in number from six to ten, and are from one-quarter to an inch in length. Though pretty deep, they are generally free from ulceration in those who are cleanly in their persons; but when ablution is not daily resorted to, they become impacted with irritating secretions, which create inflammation, excoriation, and even ulceration of the lining integument.	"The itching is often most distressing on getting warm in bed, and frequently prevents the patient sleeping until he is completely worn out. The skin around the anus will become thickened and furrowed; the furrows assuming a radiated direction diverging from the centre of the anus. They vary in number and length, and though often deep, are generally free from ulceration, if due attention to cleanliness is observed; but should this have been neglected, and irritating secretions have accumulated, inflammation will be induced, followed by excoriation and ulceration.
"The late Dr. Lettsom thought that the pruriginous state of the anus prevented the occurrence of more serious diseases.	"Some authors think that a pruriginous state of the anus ought not to be interfered with, as it wards off more serious diseases.
"In the treatment of this obstinate and very troublesome disease * * provided the habits are sedentary, and the health delicate, exercise in the open air, alterative and chalybeate medicines, with a well-regulated nutritious diet, will be necessary. * * Should the patient have been in the habit of partaking of highly seasoned food, and drinking liquors freely, he may be put upon a vegetable diet, and restricted to water. * *	"In the treatment of this very obstinate and troublesome disease * * should the patient be delicate and his habits sedentary, plain and nutritious food will be necessary, conjoined with proper exercise and the administration of alterative, tonic, and chalybeate medicines; but if the contrary be the case, and he has been accustomed to indulge himself in highly-seasoned dishes, and to partake freely of wine and spirituous liquors, he must be restricted to a vegetable diet, and the quantity of stimuli considerably reduced, if not altogether disallowed. * *
Much comfort and advantage will be derived from two or three warm baths each week. The local applications which I have found the most useful are the yellow wash, lead-water, and laudanum. * *	Much advantage as well as comfort will be derived from the use of the warm bath every second or third day. The local remedies that will be found most useful are lotions containing nitrate of lead with wine of opium, lime-water, and calomel, or the bichloride of mercury. * *
I have, however, observed far more	But that which will frequently be

benefit to arise from rubbing the surface lightly over with the nitrate of silver so as to produce a slight exfoliation of the skin." * *	found most serviceable, is brushing the part over with a solution of nitrate of silver so as to produce a slight exfoliation of the skin."

In this short chapter of five and a half pages, containing not more than 140 words to the page, a great part has been taken, with very little alteration, as we have shown; some more has been taken and a good deal altered; a very little original matter, and this of small importance, has been added, and it is given as an original production; of Dr. Bushe, it being merely said in the preface, that to him the author is indebted for much valuable information!

Let us now take a view of a portion toward the end of the book; the seventeenth chapter corresponds to the fifth of Bushe's work, the one being entitled Laceration of the Rectum; the other, Injuries of the Rectum.

Dr. Bushe says :—	Mr. Ashton says :—
"If the consequence of defecation, the rent is either transverse or vertical. When transverse, it is situated above the internal sphincter, and is the effect of the forcible extension of a fold of the mucous membrane, which, lapping under the mass of indurated fæces, becomes forcibly everted by their expulsion, and in undergoing this change of position is torn from side to side. When vertical, it generally terminates where the skin and mucous membrane unite, and is the result of forcible and violent distension of the anus. (NOTE.—In some cases of constipation, while the expulsive muscles act with great energy, the sphincter remains contracted and yields but slowly.") * *	"If the rent is the consequence of defecation, it may be either vertical or transverse; when vertical it results from undue distension of the anus during the violent efforts of the expulsive muscles, while the sphincters are contracted, or yield but slowly; it usually terminates at the line of junction of the skin and mucous membrane; when the laceration is transverse, the situation is above the margin of the internal sphincter, and is the effect of a fold of mucous membrane of the pouch of the rectum falling under a mass of indurated fæces at the time of their forcible extension, and being dragged down with them is torn from side to side."

By having changed the order in which Dr. Bushe treated the two forms of rent, Mr. Ashton has concealed, to some degree, the plagiarism, but by restoring this order it is quite apparent. We will make a few more extracts from the same chapters :—

"The pain, however, gradually but never entirely subsides, and is always renewed, with more or less severity, by each successive evacuation. * * Inflammation commences, effusion of	"Pain, which is lessened after a time, but does not entirely subside, and is renewed with more or less severity whenever the patient goes to stool. * * Inflammation is set up,

lymph takes place, the edges and base of the rent become swollen, granulations sprout up, followed by suppuration, and now either cicatrization ensues or the wound is converted into an ulcer.	lymph is effused, the margins of the rent become swollen, granulation and cicatrization follow, or the wound degenerates into an ulcer.
"The great object in the treatment of this injury is to keep the bowels easy by the use of emollient lavements and after each evacuation to cleanse the wound; for I have seen some cases in which the lodgment, even of a small quantity of feculent matter between the lips of the wound, created the most agonizing pain and spasm of the sphincter ani," etc. etc.	"In the treatment of this injury it is essential to keep the bowels easy; emollient enemata will effect this object better than any other means. The wound must be cleansed after each evacuation, or the lodgment of particles of fecal matter will possibly give rise to agonizing pain and spasm of the sphincter," etc. etc.

We will give a few more extracts taken from the chapters on Laceration of the Rectum. These we give principally in order to show that when portions do not at first glance much resemble one another, a slight examination is sufficient to render this manifest.

Dr. Bushe says :—	Dr. Ashton says :—
"The symptoms of this disease are pain, a sense of weight in the sacral region extending to the loins, vesical irritation, tenesmus, the discharge of a thin bloody fetid pus from the anus, besmearing of the fæces with the same. (Note.—Mr. Colles says :—'At times the quantity of the discharge is much loosened, and then the sufferings of the patient are much aggravated; but on the flowing off of a larger quantity, he experiences great relief.' This I have not observed; indeed, in the last case specified in this chapter the pain has always been most severe, when the discharge was most abundant.) Smarting and even acute pain in the rectum invariably increased by defecation; and, when the ulceration extends low down, spasm of the sphincters with the other concomitants mentioned under the head of fissure.	"The symptoms of ulceration of the rectum are pain in the gut extending up the sacrum to the loins, or sense of weight in the bowel—a discharge of sanious, purulent or muco-purulent matter oozing from the anus,—the fæces will be besmeared with blood and pus, and the patient will be troubled with tenesmus, and irritation of the urinary organs. Mr. Colles, speaking of the pain and discharge in this disease, says :—'At times the quantity of the discharge is much loosened, and then the sufferings of the patient are aggravated, and on the flowing off of a large quantity, he experiences great relief.' This, I presume, must have been due to the acute and excessive inflammatory action, and not depending alone upon the quantity of matter secreted by the ulcer. Smarting at stool, and if the ulcer be situated near the verge of the anus, there will be spasm of the sphincter, as in fissure of the part.

"If the finger be introduced, the ulcerated surface may be detected by its roughness; but the better plan is to dilate the anus with the speculum, (Note.—Mr. Colles recommends a blunt, polished gorget, with its concavity looking toward the seat of the disease, to be passed upon the fingers into the rectum; then by everting the anus as much as we can, we shall obtain a full view of the ulcer by the light reflected from the gorget,) when the situation, extent, form and character of the disease can be easily determined. In many cases, however, nothing more will be necessary than to separate the buttocks, and press apart the edges of the anus with the fingers."

"If it exists higher up * * the speculum must be used to dilate the anus, when we shall with ease be able to judge of the situation, form, extent, and character of the ulcer. Mr. Colles recommends 'a blunt, polished gorget, with its concavity looking toward the seat of the disease, to be passed upon the finger into the rectum; then by everting the anus as much as we can, we shall obtain a full view of the ulcer by the light reflected from the gorget,' when * * it may be brought into view by divarication of the buttocks and pressing aside the edges of the anus with the fingers."

We might go in this way much farther, but it seems to us that we have shown sufficiently the truth of our assertion, that by merely stating in his preface, from Dr. Bushe's work he has gained much useful information, Mr. Ashton has not expressed with sufficient explicitness the extent of his indebtedness to it. By declaring that he had revised and extended a valuable work, which the author had been prevented by death from doing for himself, he would have spoken with more propriety. We prefer saying no more on the subject, but we feel that we ought not to leave it without having called attention to the manner in which the vast number of extraordinary cases that Dr. Bushe had collected with much laborious research, and printed in notes at the foot of the page, particularly on the subjects of abscess near the rectum, foreign bodies in the rectum, and hemorrhoidal affections, have been copied and inserted in the text of Mr. Ashton's book.

From the titles of the various chapters contained in the work before us, and which we have given above, it will be seen that all, or nearly all, the numerous affections to which the rectum and anus are liable, are treated of therein. There is but one, at least so far as we can recollect, that has been omitted, and that is the affection, first pointed out, we believe, by Dr. Physick, known by the name of *Preternatural Pouch* of the anus.* With this single exception the surgeon will find therein information, and valuable information, for every case of disease about the rectum and anus that will come under his notice. It might, perhaps, we may add, have been well to have left out the consideration of the subject of habitual constipation, and to have treated, in its stead, of the anatomy and functions of the rectum and of the anus.

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* This affection is treated of very fully by Dr. Reynell Coates, in the ably written article *Anus*, in the *American Cyclopedia of Medicine*.

It is scarcely possible to overrate the importance to the medical man of a proper knowledge of these affections, which Mr. Ashton, in his introduction, declares to be more prevalent, to cause more suffering, and to induce a greater number of varied and distressing symptoms than any other class of diseases, among civilized communities. In fact, as M. Begin says, the lower termination of the large intestine, and the opening which follows it, are endowed with every condition that could render their lesions at once frequent and serious. "A double ring surrounds the anus, which is opened only by the exertion of forces situated higher up. Large mucous follicles destined to favor the slipping of the matters to be expelled, a delicate sensibility often aroused, numerous arteries and veins forming a plexus, at times enormous, a reservoir wherein are accumulated substances irritating by their volume, their consistence, or their composition; in both sexes, the neighborhood of the most active portion of the genito-urinary organs, whose excitations, congestions, or pathological alterations extend readily to the contiguous organs; finally, the efforts of coughing, of speaking, of great muscular movements which react upon the anal region,—these are, (not all, for their enumeration would lead us too far,) but these are the principal circumstances of structure, of connection, and of function, that render the rectum and the anus so important in pathology." Of these affections, some are much more important and much more frequently met with than others, and consequently worthy of much more attention. Those to which most space has been devoted in this work are fissure of the anus, hemorrhoidal affections, prolapsus of the rectum, fistula in ano, stricture of the rectum, and malformations of the rectum, and we will enter into some consideration of the doctrines taught therein upon these several affections.

If the patient's suffering may be taken as the criterion of the importance of a disease, a comparatively lengthy chapter is very properly devoted to fissure of the anus and rectum, for in the whole catalogue of ills to which the human frame is liable, there are but few that give rise to as much suffering as this one, which is well styled by Mr. Syme, "that most intolerable of ailments." A distinction, however, exists in fissures of this region, and it ought to have been noticed by Mr. Ashton, who has omitted to mention it, as in fact have most writers on the subject; there are *painful* fissures, and fissures that are *not painful*. It is not every crevice about the rectum that will give rise to horrible pain; a surgeon, whose position at the Hospital du Midi, in Paris, had compelled him to make very frequent examinations of these parts, told us that he had many times observed fissures that were not at all painful and that did not reveal themselves by any symptom. Mr. Quain, therefore, in his very instructive work on diseases of the rectum, very properly styles this affection *painful ulcer.*

In the treatment of this troublesome affection, Mr. Ashton has much more confidence in the effect of local applications than is generally accorded to them by surgeons. He says: "My experience fully justifies me in stating that in the majority of recent cases it is not necessary to have recourse to an operation, although some of high authority in the profession assert that incision is the only effectual remedy, and that all sorts of applications, soothing or irritating, are unavailing," (p. 43.) We are inclined to believe that Mr. Ashton is correct in this opinion. One of the worst cases of fissure that ever came under our notice, in which division of the ulcer and of the sphincter ani had been performed without avail, and by one of the first surgeons of this country, was cured by the patient himself by the following course of treatment. He commenced by evacuating his bowels thoroughly with citrate of magnesia; using afterwards cold water injections; he then passed two weeks without having an evacuation, eating very little and of very light food; at the expiration of which time he repeated the citrate of magnesia and the enemata, and so on; at the end of two months he was well, and has remained so for more than a year. He took care, and this we believe to be very important, to have his stools in bed in a reclining position, and to remain there for twelve hours afterwards. We are acquainted with a second case in which this course of treatment proved efficacious, after an infinity of local applications had failed.

Mr. Ashton appears to us to pay too exclusive attention to the local treatment, only adding that, "at the same time it will be necessary to attend to the state of the secretions and excretions, and to correct any error in the patient's habits and manner of living," (p. 45.) The preparations he prefers as local applications are those of lead, opium, and belladonna, applied both as washes and as ointments. It is rather strange that he makes no mention of the use of infusion of rhatany in injection, for it has deservedly acquired great reputation.

The operation for the cure of fissure, described by Mr. Ashton, is a modification of the one recommended some fifty years ago by Boyer; it having been shown that an incision through the ulcer suffices for its cure, without dividing the sphincter. This incision may be made from within outward, or, as advocated by Mr. Syme, from without inward. Mr. Ashton expresses no preference for either of these methods; but having several times wounded himself when performing the latter operation, he finds the better plan to be to introduce the speculum and to cut into the open side. There is another operation, which we have seen performed a number of times, and which ought undoubtedly to have been noticed in this work; we mean forcible instantaneous dilatation of the sphincter, first performed by Récamier, and afterwards modified by Nélaton. The two thumbs are introduced, one after the other, into the rectum, the four other fingers of each hand being applied over the ischiatic tuberosities; in this position the thumbs are separated until they touch the internal face of the tuberosities. In doing this a resistance is felt, when suddenly an interior rupture is perceived, and the two thumbs touch the bone; this is sufficient. In this operation there is no danger of wounding the blood-vessels of the rectum, and consequently of purulent infection; nor is there any dressing to make. During the first few days it is well to administer injections, in order to facilitate the stools, and at the end of a week the patient can attend to all his occupations.

The chapter treating of *Hemorrhoidal Affections* is the longest in this book; it contains one hundred and fourteen pages, not one too many, however, when the frequency, and, oftentimes, the severity of these affections are considered. Frequent as these affections are, if the peculiarities of the venous circulation in the portal system be reflected upon, it must be quite a matter of surprise that affections of the veins about the rectum are not still more common. From the resistance the blood in the general circulation encounters in traversing the capillaries, much of its moving force is lost, and to move regularly in the veins it requires some assistance, that is obtained chiefly from muscular movements and the aspiratory action of the movements of inspiration; by neither of these is the flow in the portal veins affected. Besides, the portal veins possess no valves, and the blood contained therein is between two systems of capillaries, for these veins act as arteries in the liver, and the blood passes through a capillary net-work in that organ before it empties into the inferior vena cava. If, in passing through the general capillary system, the blood loses nearly the whole of its moving force, it is evident that the capillary system in the liver must act in the same way, and with so much the more power, as that the tension of the blood in the portal vein is already itself less than that in the arteries. In fact, well-known experiments, as for instance those made when the blood of the liver and that of the portal veins are collected for chemical examination, show that the circulation in the vena portarum is an entirely passive one; its current is directed toward the liver only on the one condition that there is a force to push it there, and this force comes from the abdominal walls, which, by pressing the mass of the intestines, propel the blood contained therein. Causes that may locally modify the circulation must, of course, act here with great efficacy, and it is far from being a matter of surprise that the hemorrhoidal veins, those most exposed, are often enlarged and diseased. Nature, as usual, has made provision for their protection, and were it not for the relief afforded them by the communications existing in the walls of the rectum, between the inferior mesenteric vein, and the middle and inferior hemorrhoidal, branches of the hypogastric, they would be still more often affected.

It is very hard to say how far the rapidity of the current of the blood in the portal vein may be diminished, but one experiment is sufficient to show the influence, in this respect, of causes constantly occurring. The ferro-cyanuret of potassium shows itself in the urine as soon as it reaches the general circulation; this salt, when given twenty-four minutes after a meal, appeared in the urine at the expiration of sixteen minutes; and when given two hundred and forty minutes after a meal, in two minutes. In fact, when the fatal consequences of the sudden injection into the general venous system of large quantities of even the most innocuous fluid is considered, the necessity of the prevention of the sudden passage into the inferior vena cava of the materials carried into the vena portarum, is at once apparent. Most important chemical changes undoubtedly occur in the liver, but it might be shown, we think, by reasons taken from numbers of facts in normal and pathological anatomy, both human and comparative, as also in physiology, that its action as a mechanical agent is most important. If a few ounces of water suddenly thrown into the general circulation of a dog can produce death, what would be the effect if, in man, the liver did not intervene between the inferior vena cava and a barrel of lager beer?

Hemorrhoids have been divided into many classes by some writers, but their usual classification, as internal and as external, the one adopted by this treatise, is all that is necessary for practical purposes. As Mr. Ashton says:—

> "The most practical and important classification to bear in mind, as influencing the treatment, is the division adopted by most English authors into internal and external hemorrhoids; the former being those which occur within the margin of the anus, and involve the mucous membrane of the intestine, and the latter, those which are situated external to the sphincter ani, and are covered by the thin integument of the anus," (p. 87.)

As to the pathological anatomy of these tumors, external hemorrhoids are said by Mr. Ashton—

> "To consist of the integument and cellular tissue, into which the blood has been extravasated, as a result of a congested state of the hemorrhoidal vessels,

and determination of blood to them, produced by causes to be hereafter mentioned; generally the blood is encysted in a central cavity, with a smooth, glistening surface; in some cases there are several of these cavities filled with blood," (p. 88.)

The tumors constituting internal piles, he says—

> "Consist of a morbid alteration in some portion of the mucous membrane of the rectum, and submucous areolar tissue, with an augmented and abnormal development of the capillary vessels," (p. 90.)
>
> "By dissection, internal hemorrhoidal tumors will be found to consist of both arteries and veins, the latter capacious, not in a diseased condition, but merely of abnormal development; the areolar tissue of the mucous membrane is hypertrophied, and if the tumors have existed long, and been subject to repeated inflammatory attacks, it will also be condensed. To the touch they have a spongy elastic feel, and by some authors are considered to resemble erectile tissue in structure; had they compared them to those abnormal developments of the vascular system termed aneurism by anastomosis, the analogy would have been more correct," (p. 91.)

We must differ from Mr. Ashton as to the nature of internal hemorrhoids, although so confident is he of the correctness of his own opinion, that he declares it somewhat surprising that many of the later writers should hold a different opinion in regard to them. Internal hemorrhoids do not always leave any trace after death, and when an injection is thrown into the mesenteric or the portal vein, they make their appearance again; they, therefore, must be varices. The dissections of Blandin and of Jobert show, to our mind most clearly, that primitively these hemorrhoids are varices. When they have lasted long, the causes from which they had their origin continuing to act, changes occur in them, masking their origin; from adhesive phlebitis the walls of the veins thicken; or becoming thinner from pressure, they yield, and blood is effused in the neighboring cellular tissue, which becomes hard and thickened from inflammation thus excited. At the dissection of an old hemorrhoid, the veins are found having lateral dilatations, full of blood, and sometimes of clots, which may be incrusted by calcareous matter, and form true phlebolithes; the cellular tissue between the veins is indurated by the presence of granular, amorphous matter, which renders the fasciculi very adherent, and containing some fibro-plastic elements and elastic fibres. The old opinion of Morgagni, who says, "Hæmorrhoides nihil esse aliud quam varices venarum ani," is always true of them, when internal as well as external, at least when recent.

Under the list of causes giving rise to hemorrhoids, there is nothing mentioned in this work which has not often been given before.

> "Any impediment," it is said, "offered to the return of the blood from the lower bowel will cause hemorrhoids. It will arise from two causes, the one being mechanical in its immediate effect, the other pathological, and depending on disease and alteration of structure in some of the internal organs. Those causes which act mechanically are the pregnant uterus, ovarian and other tumors developed in the pelvis or abdomen, which, by pressure on the large venous trunks impede the ascent of the blood; tight-lacing and cinctures also have the same effect. The pathological causes are congestion and structural diseases of the liver, pancreas, and spleen; diseases of the lungs, heart, and large blood-vessels, interfering with the free circulation of the blood," (p. 110.)

A cause of hemorrhoids, at least what in our way of thinking may be one, which has been neglected by Mr. Ashton, and by all other writers on this subject with which we are acquainted, is weakness or relaxation of the muscles of the anterior wall of the abdomen. It is, as was said before, undoubtedly a fact, proved by experiment, that the pressure exerted by these muscles upon the mass of intestines is the cause of the onward movement of the blood in the portal veins toward the liver, and any cause diminishing this pressure, whether position of the body or feebleness of the muscles themselves, must lead to more or less stagnation of this blood, and consequently to hemorrhoidal affections. Tailors, shoemakers, dressmakers, and persons engaged in writing, which forces them to lean forward over a desk, are particularly subject to hemorrhoids; and we would explain the well-known influence of sedentary occupations generally upon these affections more by their producing relaxation of the anterior abdominal walls than by the deficiency of exercise and the constipation attending them, though these must play their part also. An undoubted cause of an attack of hemorrhoids not mentioned by Mr. Ashton, and one not unfrequently witnessed, is parturition. It is not very uncommon for the patient to suffer most severely after the birth of the child, from the strangulation of a mass of hemorrhoidal veins that have been forced out with the first discharge of fæces, and unless they are recognized and speedily replaced, they give rise to intense suffering at a time when the system is not most able to endure it. As the abdominal walls are in a state of extreme relaxation, the fact that hemorrhoids are often seen at this time, is one important to notice, in connection with what has just been said.

The diagnosis of hemorrhoids is attended with but little difficulty, for there are few diseases with which they can be confounded. In case it may be desirable to arrive at a correct knowledge of the tumor, and of the condition of the neighboring parts, a digital examination of the interior of the bowel must be made. In making this, previous to the introduction of the finger, Mr. Ashton advises that—

> "The cavity of the nail should be filled with soap, which will prevent it

scratching the intestine, and the finger must be dipped in oil to facilitate its introduction; lard and unguent do not answer so well, as they interfere slightly with the delicacy of the sense of touch." As to the position of the patient, "he should be directed either to lean over the back of a chair, or to lie upon a sofa on his side, with the nates projecting over the edge, and the knees drawn up; the latter position is preferable, and should always be adopted with female patients," (p. 122.)

Before proceeding to any local treatment for the cure of hemorrhoidal tumors, it is always proper for the surgeon to examine as to the safety of arresting the discharge by which they are accompanied. Many surgeons have no hesitation in so doing; Mr. Syme, for example, "protests against the mischievous fallacy of representing such a drain as salutary;"* but cases in which its arrest has been followed by severe and even by fatal consequences, are recorded in treatises of unquestionable authority. Mr. Copeland, in his "Observations on the Principal Diseases of the Rectum and Anus," (third edition, London, 1824, p. 57,) cites several cases that had come under his notice, where the consequences were most alarming, and one in which death was caused by the suppression of the discharge.

Mr. Ashton's views upon the subject are very correct, and we will give them in his own words:—

> "When piles have existed for a long period, have continued from youth, or the commencement of puberty, when they supervene upon or replace some serious organic or habitual affection, if they are preceded by constitutional disturbance, and succeeded by an improvement in the state of the health, if well-marked indications of plethora exist, which are relieved by the accession of the hemorrhoidal flux, and if indications of congestion, or disease in any of the organs, accompany or follow its suppression or interruption, or any hereditary predisposition exists, a constitutional nature may be inferred, and local treatment must be a secondary consideration, and not adopted till the constitutional cause has been removed or palliated; this is especially necessary if there is a predisposition, hereditary or otherwise, to apoplexy, gout, phthisis, hæmoptisis, epistaxis, or other kind of hemorrhage," (pp. 122 and 123.)

Both the constitutional and local measures to be used for the relief of a patient suffering under hemorrhoids and the various complications to which they are liable, advised by Mr. Ashton, are very judicious, and they are detailed with great minuteness. In case the removal of the tumors be decided upon, he prefers to excise them, if external, and when internal, to make use of the ligature, and in some cases, of the nitric acid. The fatal results following the application of the ligature, such as phlebitis, diffused inflammation of the cellular tissue of the pelvis, peritonitis, and tetanus, he refuses to credit. Although instances have been recorded by surgical writers, he declares that—

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* On Diseases of the Rectum, by James Syme. Third edition. Edinburgh, 1854, p. 14.

"They have neither verified their surmises as to the cause of death, by post-mortem examination, nor have they shown that the cases were such as justified surgical interference," (p. 137.)

The plan we have usually seen adopted for the removal of hemorrhoidal tumors, is their destruction by the actual cautery, a mode of treatment which we do not find noticed by Mr. Ashton. The patient being placed upon a table, a metallic wire is first passed through the tumor so as to hold it properly, and the mass is then thoroughly burned, with the red-hot iron, the neighboring parts being protected by a thick fold of linen, dipped in water, having a hole in the centre corresponding to the structures to be cauterized. By taking this plan the surgeon runs no risk of phlebitis, which is certainly to be feared after applying ligatures to veins; they should never be used when they can be avoided. Whatever may be the local treatment adopted, after the removal of the hemorrhoids, the patient must carefully avoid all the causes that induce the disease under which he had labored.

As usual, to this chapter upon hemorrhoidal affections is appended a large number of cases, for the purpose of illustrating the different phases and the treatment of the disease therein described. In this instance as many as forty-two pages are thus occupied.

The subject of *Prolapsus of the Rectum*, which occupies the eleventh chapter, is discussed in rather an unsatisfactory manner, particularly as regards the treatment of that affection. Mr. Ashton advises the adoption of some measures which may, we think, be even injurious, and omits all mention of others by which we have known the condition of the patient to have been materially benefited. We doubt, for example, the utility of emollient enemata which are recommended by him for the purpose of preventing costiveness, (p. 210,) and are strongly inclined to partake the opinions of Mr. Quain, in respect to the use of injections of any description in the treatment of prolapsus. In the excellent work which we have already cited, after relating a case of long-continued prolapsus cured by operation after the failure of other means, among which were the injections of the tincture of the sesquichloride of iron, so long recommended by surgical writers, Mr. Quain adds:—"As regards the fluid injected in this instance, I cannot say that I am disposed, from what I have seen, to expect advantage from it, or, indeed, from any other used in the same way. As, moreover, the injections bring on fresh action of the bowels, I think it on the whole best to abstain from using them," (p. 135.) When an operation is had recourse to for the relief of the patient,—if he be more than five or six years of age, so far as we know, all other means fail to cure,—the one preferred by Mr. Ashton, as the most simple, most effectual, and the least painful, is that performed by Mr. Copeland.* In this operation a number of ligatures are applied, for the purpose of strangulating the prolapsed portion of bowel. In this edition of the work he also recommends, for the first time, the application of the concentrated nitric acid, which he says he has made use of "with the happiest result, and thinks it the better plan of treatment, except in those cases in which the mucous membrane is very lax and voluminous," (p. 213.)

An operation we believe to be preferable to either of these, but not mentioned by Mr. Ashton, is the destruction of the prolapsed mucous membrane by means of the actual cautery, in the way described when speaking of hemorrhoids. We must express some surprise that this operation is not mentioned in either of these chapters, for it might be said to be the only one now performed for the cure of piles and of prolapsus ani, by continental surgeons. The only objection to its use is the pain it causes, and Mr. Ashton says that when his patient prefers to take chloroform, he does not refuse to administer it, (p. 156.)

Another operation recommended by Mr. Ashton, when the protrusion is the result of relaxation of the anus, is the excision of a marginal fold of the integument and mucous membrane from either side. This plan was first recommended by Dupuytren; at least that surgeon practiced it very frequently, and considered it a very successful one. M. Nélaton, who was his interne at the Hotel-Dieu, made it a habit to follow the patients who left *cured;* and he found that after they had recommenced to work, the affection almost always returned.

We have known adults suffering under prolapsus of the rectum, to be rendered quite comfortable by pursuing a very simple plan, which we do not find mentioned by Mr. Ashton. It consists merely in having the daily evacuation of the bowel, just before retiring to bed, instead of, as is usual, early in the morning. Patients sometimes find this out for themselves, that if they go to stool in the evening, and immediately afterwards go to bed, the rectum does come out, and they can attend to their affairs very comfortably the following day.

Mr. Ashton pays considerable attention to the constitutional treatment in these cases, and it is of the utmost importance, particularly when the patient is young. In such patients as a general rule, the whole of the intestinal mucous membrane is inflamed, as well as that portion of it protruded at the anus. This portion, in fact, is only protruded mechanically from the continued straining, which is caused by the frequent stools induced by the diseased condition of the whole intestinal canal.

Fistula in ano, the subject of the thirteenth chapter, is, after hemorrhoidal affections, the one to which in this work Mr. Ashton has devoted the greatest number of pages, fifty being thus occupied.

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* *Loc. cit.* pp. 79 to 83.

As respects the formation of the internal opening in complete fistula, there are, as is well known, two opinions, each held by able men equally positive as to their own correctness. Mr. Syme, for instance, expresses himself as follows, the italics being his own: "Having made this examination times innumerable, before as well as after evacuation of the abscess, I do not hesitate to affirm, that when a *fistula in ano is formed, the mucous membrane always remains entire in the first instance, and is never perforated until after suppuration has taken place*," (*Loc. cit.*, page 25.) Sir Benjamin Brodie, on the other hand, says: "I believe that this is the way in which fistulæ in ano are always formed, namely, the disease is originally an ulcer of the mucous membrane of the bowel, extending through muscular tissue into the cellular membrane external to the intestine," *Clinical Lectures on Surgery, etc.;* Philadelphia, 1846, p. 187.) From cases that have come under his own observation, Mr. Ashton differs from the authors just quoted, as to the internal opening being always formed either in one way or the other; he is convinced that the perforation of the intestine takes place in both the ways just mentioned, (p. 238.) This is, at all events, the opinion that most simplifies the affair.

This internal orifice, as was first pointed out by M. Ribes, is always situated very near the margin of the anus; in seventy-five cases examined by him, after death, in not a single instance did he find it situated at a greater distance from the anal margin than five or six lines. Of course, in exploring with the probe for the purpose of discovering the situation of this orifice, it is very necessary to proceed with the greatest gentleness, bearing in mind at the same time its usual position. On this point Mr. Ashton judiciously remarks:—

> "In making the exploration, no force should be applied to the probe, or it may be thrust through the walls of the sinus into the loose cellular tissue surrounding the gut, and a very erroneous impression of the course of the fistula obtained. It must be recollected that a probe is an instrument not to be directed with an absolute control, but one from which we are to gather information: it is to guide and instruct us," (p. 243.)

It is at times exceedingly difficult to find this internal orifice, and in such cases we have seen the expedient of injecting an innocuous colored liquid, as milk, into the external orifice, made use of with success; the liquid finds its way to the internal orifice whence it can be seen to flow. We have seen this same expedient successfully resorted to also in a case of vesico-vaginal fistula, where the orifice was so small as to be detected with difficulty; by throwing milk into the bladder through a catheter, it was seen dropping into the vagina, into which, of course, a speculum had been introduced.

"If," says Mr. Ashton, "the health of the individual is good, and all circumstances are favorable, a fistula may sometimes be made to heal without an operation," (p. 249.) This is all very true, but it is not sufficiently explicit; what these circumstances are that are favorable ought to have been mentioned, otherwise the surgeon will lose time and probably his patient, in attempting an impossibility. When the fistula is only separated from the anus by the thickness of the mucous membrane, it will be vain to attempt to heal it without an operation; but when a considerable thickness of tissue intervenes, this can often be done. In the one case, the wall of the fistula is movable, but in the other it is solid, fixed, so to speak, in the perineum. The injections to be used for this purpose, mentioned by Mr. Ashton, are solutions of the sulphate of zinc or copper, or the nitrate of silver; that which we have seen used with success, and which we should prefer to either of these, is composed of one-third of the tincture of iodine and two-thirds of water, with some iodide of potassium to hold the iodine in solution. When an operation must be performed for the cure of the fistula, Mr. Ashton well describes the mode in which it should be done, as follows:—

> "On the morning previously to the operation, the bowels should be acted upon by a mild cathartic, and an enema of warm water or thin gruel administered; the operation is then to be performed in the following manner:—The patient kneeling on a chair, and resting on the back of it, or leaning with his elbows on a table, or lying on a bed or couch, with his knees drawn up, and the nates projecting, an assistant separates the buttocks, and the surgeon, introducing the forefinger of the right or left hand into the rectum, according to the side on which the fistula exists, makes himself familiar with its track and position by using the probe as previously directed; having accomplished this, he passes the blade of a probe-pointed curved knife into the external orifice along the course of the fistula, making it emerge through the internal opening, the point being hitched by the finger in the rectum; both hands are then depressed, and with a slight sawing motion the intervening tissues are divided, and the knife and finger brought out together. If the surgeon be timid, or unaccustomed to operate, or the fistula so tortuous that the knife cannot readily pass along its track, a grooved silver director, or strong probe, may be used; it must be bent as required, and, having been introduced through the opening in the integument and that in the bowel, the end is pulled down, and made to protrude at the anus; the parts are then to be divided by passing a sharp-pointed curved bistoury along the grooved channel, and the operation is finished," (p. 260.)

The measures to be adopted after the operation, and until the complete healing of the wound are also carefully detailed. When the fistula is of the blind internal form, it is advised to make it complete by passing a bent probe into the sinus, and then cutting down upon the end projecting against the integuments; the operation can then be finished with a curved knife as just described. In the same way, an external blind fistula, extending to the coats of the intestine must be made a complete one by perforating the bowel with the knife used in operating for complete fistula, by pressing it against the edge of the nail of the forefinger, previously introduced into the bowel; the operation is then at once finished in the usual way. By thus presenting the edge of the nail to the edge of the knife, instead of the pulp of the finger, the surgeon will not wound himself, and the plan is a more convenient one than that of using a wooden gorget in order to avoid this accident.

It is sometimes necessary in operating for the cure of this affection, to divide parts so deeply seated that their destruction by a cutting instrument would not be without danger. Cases of this kind are not noticed by Mr. Ashton. When they are met with, the parts may safely be divided by the forceps devised by Dupuytren, in his operation for the cure of artificial anus; so great a constriction of the parts inclosed being produced by them, that circulation becomes impossible, and they mortify. This plan, though successful, is attended with the inconvenience of forcing the patient to wear an instrument for some time, perhaps four, five, or six days, projecting from the anus. Instead of seizing the part to be destroyed by an instrument, thus slowly producing its destruction, M. Nélaton seizes it in a pair of hot forceps, and destroys it in a few moments. In performing this operation the neighboring parts are protected by the gorget made use of in the operation of lithotomy.

When the patient laboring under fistula is the subject of phthisis, Mr. Ashton agrees with most surgeons in dissuading from surgical interference. He says:—"If the operation be performed, the wound will not heal; or should it do so, the probable result will be either the formation of a fresh abscess, or the aggravation of the pulmonary disease," (p. 266.) He adds, however, very properly, that he should not refuse to operate, if by declining he should induce a sense of hopeless mental depression and despondency.

In the chapter upon *Stricture of the Rectum*, Mr. Ashton treats of contractions of the gut that are the result of other than malignant diseases. It is a disease not often met with, but one causing great annoyance; and although not attended with immediate danger to the patient, yet he becomes gradually exhausted. It is, as Dr. Bron says in an excellent little treatise on the subject,* "It is with strictures of the rectum as with strictures of the larynx; the patient who has a stricture of the respiratory passages does not always die of asphyxia, but he gradually dies out, because he only breathes a part of what he should. Hæmatosis is insufficient, nutrition and innervation are enfeebled, and the patient dies slowly. Tormented by the idea of passing the food they take, patients often take too little; they stint themselves, and the insufficient alimentation, joined to the delay of which we have spoken in going to stool, at last always leads to disorders in the digestion, in the circulation, and in the innervation, and renders more serious the prognosis which the practitioner must give."

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* Nouvelles Considérations sur les Rétrécissements du Rectum, par le Dr. F. Bron; Lyons, 1856.

After enumerating a great number of possible causes of stricture, Mr. Ashton concludes by saying that "authors also mention syphilis, metastasis of cutaneous eruptions, and suppressions of discharges that have existed for some time, and have become habitual, as causes of stricture of the rectum." This is not allotting sufficient importance to syphilis as the cause of this complaint, which it is important to do, particularly on account of the influence of anti-syphilitic remedies in its cure.*

The most usual seat of the disease he agrees with most authorities in placing at a distance of not more than two or three inches from the anus, where it can readily be detected by the finger. Just at this spot in the rectum a quite well-marked muscular circle can always be found existing external to the longitudinal muscular fibres of the intestine; and the stricture has been shown to be, in some cases, owing to the hypertrophy of this muscular bundle—an important fact not mentioned in this treatise.

In the treatment of this affection the object to be obtained is, of course, to restore the bowel to its original dimensions, or, at least, to enlarge it sufficiently to permit the fæces to pass with freedom. Dilatation by means of bougies is the only plan for effecting this purpose that Mr. Ashton recommends. When the disease is the result of chronic inflammatory engorgements, by compressing the swollen parts, simple dilatation would be effectual. When, however, it is the result of contraction, from hypertrophy of the muscular tissues, such treatment will not be sufficient; and sudden and violent dilatation, by the tear it produces, will be required in order to bring about a cure. Some surgeons have found that by effecting dilatation with the bladder of a calf, the patient suffers less pain and inconvenience than when the ordinary bougie is used, as if the contact of animal matters with our tissues is more supportable than any other substance whatever. Of course when the result of syphilitic infection of the system, proper constitutional treatment will be demanded; but not only in such cases is constitutional treatment beneficial, in many others it is very important, and we must consider it strange that Mr. Ashton, who, as a general rule, is particularly attentive to the constitutional treatment, should here say nothing about it. Though local measures in the treatment of stricture are of great importance, they must, by no means, be regarded as the only, or as the chief resource. If, as Mr. Quain remarks, the eye, or a serous membrane, or the testis be affected with fibrinous deposits, medicinal treatment is, by universal assent, resorted to; and if the judicious use of certain medicines be useful in such cases—and it undeniably often is so—why should the fibrinous deposit in the bowel be considered to be necessarily beyond the reach of similar means?*

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* See the Memoir of M. Gosselin on this point in the *Archives Gén.* for 1852, 5ième séries, tome iv.

We have now finished the task we had allotted to ourselves, and have examined at considerable length those chapters in Mr. Ashton's book to which he has devoted most space and most attention. We undertook this task, be it understood, because his work is considered, and correctly so, the most complete one in the English language on the subject of which it treats. The book is quite a good one, but it could certainly have been made far more so, had Mr. Ashton, in addition to the writings of authors using the English language, been acquainted with the practice and publications of the French surgeons.

ART. II.—*Congrès D'Ophthalmologie de Bruxelles. Compte-Rendu publié au nom du Bureau,* par le DR. WARLOMONT, Membre de l'Académie Royale de Médecine de Belgique, Chevalier des Ordres de Léopold, (de Belgique,) de Francois I^{er}, (de Naples,) des Saints Maurice et Lazare, (de Sardaigne,) Redacteur en Chef des Annales d'Oculistique, Secrétaire-Général du Congrès. Session de 1857. Paris: Victor Masson, 1858.

Proceedings of the Ophthalmological Congress of Brussels, published by order of the Congress, by DR. WARLOMONT, Secretary-General, etc. etc. Session of 1857. Paris: Victor Masson, 1858. 8vo., pp. 492.

IT is unnecessary to repeat the history of the Congress of which the official record is now before us in a well-arranged and handsome octavo volume of nearly five hundred closely printed pages. Many of our readers will recollect the call of the Committee of Belgian Oculists, at whose invitation and under whose able management this Congress was assembled. One hundred and fifty-nine ophthalmologists, including many of the highest standing, were brought together, and arranged in three separate sections, for the purpose of discussing and deciding on a series of questions which had been published several months beforehand in the programme of the committee of arrangement.

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* *Loc. cit.* p. 215

The authority of the leading members of those sections, and the ample opportunity afforded them for preparation for the elaborate discussion of the topics previously submitted to them, as well as the importance of the topics in themselves, give a significance and value to the decisions of the Congress which entitle them to more attention and a wider circulation than they will be likely to receive in this country. They are sufficiently interesting to warrant a much more extended and detailed review than we can give of the various debates and papers of which they may be regarded as the qualified result, and, in some measure, the epitome. The best that we can do is to consider briefly the most important of these decisions, as they were finally adopted by the Congress and published in the appendix to the *Compte-rendu.*

The first section was entirely occupied with purulent and granular ophthalmia, or *military* ophthalmia, as they prefer to name it. The discussions and written articles on the questions relating to this form of ophthalmic disease, very naturally take up a large portion of the volume. Granular conjunctivitis and its sequelæ are, unhappily, common enough in the United States to engage at least an equally paramount attention; but it is among the ordinary, and especially the immigrant population, and not the military, that they are usually encountered on this side of the Atlantic. We do not see that the labors of our congressional debaters have developed anything under this head that is actually new; but they furnish us with a voluminous and instructive array of facts, and some excellent views of pathological structure and practical hints on treatment.

In the first place, the mode of transmission of purulent ophthalmia being inquired into, it was agreed that the disease was conveyed—

> "1st. *By contact,* that is, by the transportation either directly (immediate contact) or through the agency (mediate contact) of contaminated objects.
>
> "2d. *By infection.* Most frequently the transmission of the ophthalmia is effected through the medium of air charged with contagious principles. Some physicians, however, are not convinced that objects placed in an infected region can become impregnated with miasms, retain them a certain time, and, under favoring circumstances, restore them to the air and thus establish new centres of contagion. Crowding and insufficient aeration favor the development of foci of infection, in the midst of which young subjects, unhabituated persons, and raw recruits acquire the germ of contagious ophthalmia. These foci of infection aggravate the disease when developed, and increase its duration."

The second query asks, "*What part, in the transmissibility of ophthalmia, is to be assigned to granulations, and what is the nature of these latter?*" The answer to this, proposed in the Circular, covers two pages, and presents an excellent summary sketch, as well of the different varieties of granulations viewed anatomically, as of the distinct stages of the vesicular, the only specific form, regarded practically in connection with the course and termination of the disease and with its therapeutic treatment.

They soon found, however, that a general agreement as to the nature of granulations was, as usual, impossible; although there was evidently no material difference of opinion in regard to the kind of treatment required for what all recognized in practice as granular ophthalmia. The section, therefore, very wisely saved its time for better uses, by substituting, for the formal definitions, a non-committal generality, which answers the purpose of a waiver to one part of the question, while it rather seems to beg the other. It says that "whatever palbebral granulations may be understood to be, their presence most frequently causes a work of inflammation in the conjunctiva, with muco-purulent secretion, from which arise emanations which constitute one of the causes of the development of the granulations called *military.*" This substitute was sustained by the Congress in general session, after some opposition and a lively debate, which showed that a strong necessity for definite views of the nature of the granulations, to be submitted to the treatment recommended, was felt by some of the prominent members, and that an equally strong indisposition to admit the infectious nature of the muco-purulent emanations was entertained by others.

The solution of the next inquiry (C) was more fortunate in being unanimously accepted by the section and by the general Congress. Question and answer are well worth quoting:—"*Is there one formula of treatment the superiority of which, in the treatment of military ophthalmia, has been sanctioned by experience?*"

> "The army ophthalmia is not a morbid entity, always the same, invariable in its cause, its course, and its symptoms, and therefore susceptible of being combated by a single kind of medication, whatever may be the value of this latter and the number of its cures. The employment of the numerous agents extolled by turns, has had the effect, alike of demonstrating the insufficiency of each exclusive method and of giving rise to a mixed method as variable as the form, symptoms, and complication of the ophthalmia. This is the method most prevalent at present, besides being the only rational one and the most efficacious.
>
> "This treatment, into the details of which we cannot enter, consists, (*a*) *in acute purulent ophthalmia:* of the antiphlogistic medication in its whole extent, of the local application of certain agents intended to modify the conjunctival inflammation, of detersive injections, and of excision of the chemosis; (*b*) *in palpebral granulations:* of the employment of caustic or resolvent agents, combined, if need be, with antiphlogistic, alterative or tonic, and renovating medication,

according to circumstances. In the choice of local means, preference must be given to those which are capable of contending with the disease without involving the integrity of the tissues, since experience has only too well taught the disastrous consequences of disorganizing applications. We must also know how to avoid too much or too frequent reaction, these being apt to convert the organs of vision into centres of fluxion, and to create diseased tendencies in them. On the other hand, if it is true that the value of any medication resides, for the most part, in the manner of putting it in practice, and that the very different results obtained from it often depend upon the *modus faciendi*, it is of the highest importance that the surgeon have well-settled ideas upon everything relating to the choice of preparations, their doses, and the mode of application.

"Finally, whatever be the treatment determined on, a proper application of the laws of hygiene should be the indispensable complement to the therapeutic management."

The third question (D) asks, "*What are the best measures to take to prevent the appearance and oppose the spread of military ophthalmia?*"

The answer to this is given, as unanimously adopted, under four general heads, in the following words :—

"The prophylaxis of the ophthalmia of armies comprehends :—

"I. The cure of the soldiers diseased at the time.

"II. The salubrification, and, if needed, the disinfection of the lodgings, (barracks, prisons, hospitals, etc.,) and of articles used by soldiers.

"III. Measures tending to check the propagation and the aggravation of the ophthalmia.

"IV. Measures intended to prevent the return of the disease when it has been once extinguished."

Under the first of these four heads are given fourteen different rules, comprising a complete and very precise code of regulations for the therapeutic and hygienic management of bodies of men affected with granulations. These rules being adapted to the requirements of the military hospitals and stations of continental Europe, are of less interest to American practitioners generally. They afford many hints, however, to those of us who are called upon to deal with the newly-landed denizens of our immigrant ships, or the occupants of our crowded railroad shanties, our mines, and all the holes and corners of our larger cities. The hospitals, alms-houses, and prisons, as well as the dispensaries of this country, furnish armies of granulation cases which are abundantly large enough to occupy us, without the additional burden of a swarm of military sufferers under the same crippling misfortune. The precepts adopted by the Congress in relation to the disease as observed among the soldiers, will apply, for the most part, equally well to the same affection as it prevails among the poorer classes generally, the chief difference being decidedly in favor of the soldier, on account of the discipline to which he is subjected, and the greater ease and certainty with which his treatment is controlled, as well as the general superiority of his quarters and of the diet within his reach.

Under the third head we find the following admonitions:—

> "Military surgeons have become aware that in the double relation of treatment and prognosis an essential distinction must be made between *non-vascular* granulations and *vascular* granulations with blenorrhœa. It is known, on the other hand, that cases of army ophthalmia presenting, primitively, grave symptoms, are at present very rare: so it is at least in Belgium. The disease there is very mild at the outset and amenable to a simple and generally brief treatment. The obstinacy of the mischief and the accompanying dangers, arise only at a later period, when the inflammation has invested the conjunctiva, and this membrane is secreting a muco-purulent matter. Hence, the practitioner cannot exert himself too much in allaying the evil at the beginning, and in removing all influences capable of increasing its activity.
>
> "Among these causes may be designated particularly:—
>
> "(*a*) All those which tend to bring on a congestive or irritative condition of the visual organs or to occasion an inflammation of them; a faulty dress compressing the neck and scalp; prolonged exercises in warm weather; exposure to an atmosphere loaded with dust or smoke; the action of a strong light reflected from a white surface; a want of equilibrium between the cutaneous and mucous systems; checks to perspiration, and too irritating or caustic applications to the conjunctiva; and, finally, gonorrhœa, which has a most disastrous influence on soldiers affected with granulations.
>
> "(*b*) The causes which disorder the nutritive functions, and thence exert an aggravating influence on the progress of the disease; abuse of alcoholic liquors; an unwholesome, indigestible, or insufficient diet; lodging in an atmosphere habitually cold, damp or vitiated.
>
> "(*c*) Finally, overcrowding, [l'encombrement,] the cause to which the persistence of the evil in armies must, to a great extent, be attributed."

From these considerations certain valuable hygienic rules are deduced, and given at full length in nine additional and separate precepts, which we have not room to quote. Like the others previously mentioned, although proposed for military bodies, they are, in a great measure, applicable to other classes of granular patients, in the United States as well as in Europe.

Passing over the consideration of certain prophylactic measures, under the fourth head, recommended for the purpose of permanently eradicating and excluding granular ophthalmia from the military establishments, we proceed to the operations of the second section of the Congress.

The deliberations of this section were devoted to three very important questions in the recent progress of ophthalmology, and are so instructive and full of interest that we should be glad to have the space to occupy with the various practical points and reasonings, as well as facts, presented in the course of the discussions.

The first of these questions asks, "*What is the influence of the discovery of the ophthalmoscope on the diagnosis and treatment of diseases of the eye?*" There was no difference of opinion as to the advantage gained by this new and admirable means of exploration.

The answer of the committee was adopted, to the following effect:—

> "A crowd of affections of the refracting media and of the deep-seated membranes of the eye, hitherto difficult if not impossible to diagnosticate, are now recognized with the greatest precision by means of the ophthalmoscope. Such are: Incipient opacities of the crystalline humor; pathological alterations of the vitreous body; of the retina, and of the papilla of the optic nerve.
>
> "All rational curative indications resting evidently on the perfection of means of diagnosis, the ophthalmoscope, in giving a sure basis to these indications, has impressed upon the therapeutics of diseases of the interior of the eye a certainty and a precision which they did not possess before the introduction of its employment in science."

In adopting unanimously the solution, of which we have given above a literal translation, the whole section warmly applauded the ophthalmoscope as one of the finest inventions of our epoch, doing for the eye, as was aptly said, what the stethoscope has done for the chest. The speakers of the section, however, recognized the necessity of avoiding exclusive dependence on the physical exploration; functional examination being demanded to complete the anatomical data furnished by the ophthalmoscope. Even in the cases in which the instrument fails and the functional disturbances are alone available in the examination, among which cerebral amaurosis is the one most frequently encountered, the ophthalmoscope has its practical use, in affording material aid, at least in the means of diagnosis by exclusion, through its negative evidence as to the absence of all the affections which are accompanied with positive signs. The report of M. Crocq, (secretary of the second section,) to the Congress in general session, from which we quote these notes of the discussion, refers also to the suggestion of a member of the section, (M. Von Graeffe,) that in these cases of cerebral amaurosis the ophthalmoscope furnished even a positive fact of great importance in prognosis, in enabling us to determine whether or not there is any tendency to degeneration or atrophy of the retina. When this does not exist, the retina presents its normal aspect; it is pellucid with the usual vascular development. When it is present, the retina becomes opake, white, and its vessels incline to disappear; in the one case the prognosis being evidently favorable, and by no means so in the second.

Among the functional signs, the one which was the subject of particular discussion, as probably the most important to be noted in connection with ophthalmoscopic developments, was the condition of the phosphenes, to which M. Serre (d'Uzes) has called attention for some years past. The view, which was urged at some length, by M. Serre himself, in the session of the section, and subsequently, with still greater force and brilliancy, in the general session, advocated the utility and certainty of the phosphene test, not as the substitute for that afforded by the ophthalmoscope, but as an important coadjutor where the latter can be used, and as a conclusive means of examination in cases of anterior opacity in which the ophthalmoscope is powerless.

We are unable to pursue the discussion of ophthalmic exploration reported in the *Compte-rendu*, important and interesting as the proceedings of the Congress prove it to have been. The whole subject, as exhibited in the *Compte-rendu* alone, demands a full consideration by itself, rather than the cursory allusion to which we are necessarily confined.

The remarks of MM. Heyman, Von Graeffe, Sichel, Jaeger, and Donders, on the changes of the crystalline lens and capsule, as observed with the ophthalmoscope and without it, and incidentally on the seat and mode of extension of cataractous striæ, as well as of other opacities of the lenticular body and its envelope, are all extremely interesting. Still more interesting are the observations of these and other distinguished members of the Congress, in relation to diseases of the vitreous humor, the choroid coat and the retina.

Question third of the programme inquires, "*What are the agents which concur in or preside over the accommodation of the eye?*"

The solution of the committee was adopted by the section, after full discussion, and accepted by the Congress without alteration.

It is sufficiently compact to enable us to present it without abbreviation:—

"Facts which throw some light upon this curious phenomenon are established in science. Our knowledge of these is chiefly due to the works of Helmholz.

"When the eye adapts itself to the vision of near objects:—

"1. The pupil contracts.

"2. The pupillary margin of the iris projects forward.

"3. The peripheral portion of this membrane inclines backward.

"4. The anterior face of the crystalline increases in convexity, and the central portion of this face advances toward the cornea.

"5. There is increased thickness of the crystalline, with diminished radius of its circumference and thinning of its borders.

"In the vision of distant objects:—

"1. The pupil dilates.

"2. The pupillary margin of the iris moves backward and its peripheral portion forward.

"3. The convexity of the anterior face of the crystalline diminishes and that face retires from the cornea.

"4. The radius of the circumference of the crystalline lens increases, and its central portion lessens in thickness.

"These divers changes may be explained by the modifications of curvature of the two faces of the crystalline; but, above all, by those of its anterior face, produced by the contraction or relaxation of the fibres of the iris and the corresponding movements of the ciliary muscle. These muscles, then, may be considered as the agents which preside over the accommodation or adaptation of the eye."

The fourth interrogatory of the programme comprises the three following propositions:—

"A.—*Does the present state of ophthalmological science authorize the admission of specific ophthalmias? In the affirmative, what is to be understood by this denomination, and to how many species of ophthalmia is it applicable?*

"B.—*Is the specificness of these affections recognizable by anatomical and physiological characters of the ocular globe?*

"C.—*Can a radical cure be obtained by simple topical applications, or does it always require the intervention of general treatment?*"

The answer, as modified by the section, after considerable discussion, and approved by the Congress, is given in the following three propositions:—

"1. It is demonstrated by statistics that a great number of cases of diseases of the eyes have their only, or at least predisposing cause, in the condition of the subject.

"The same anatomical lesions may, however, with few exceptions, develop themselves, when the diathesis, which is often the cause of it, does not exist.

"2. This being stated, general causes must be studied as much as possible in each case; if the clinical examination positively demonstrates their existence, we can, we ought indeed, to accept the etiological principle in the denomination of the disease. This practice will certainly exercise an advantageous influence on the progress of nosology and therapeutics; but it cannot be allowed to generalize the etiological nomenclature; it should be reserved exclusively for the cases in which a sufficiently evident relation is manifested between the diathesis and the anatomical form of the disease.

"3. The constitution and the causes derived from it, must be constantly taken into the account; it is possible that in thus proceeding we may be led by a more exact observation to find some differences among the anatomical lesions of diseases reputed similar but observed in different conditions of the constitution."

The most striking topic in the discussion of the question of specific ophthalmias, was that of glaucoma and its treatment according to the recent views of the Berlin professor, M. Von Graeffe. His notions of the pathology of acute and chronic glaucoma, and of the method and rationale of the treatment by incision of the iris, were zealously and brilliantly maintained by their author in the proceedings of the section, and a second time in the general meeting. This second demonstration was given by special request, and was received with decided acclamations of applause by the assembly. It is certainly an admirable history of the subject, in theory and practice; and proves the enterprise of the operator, whatever may be thought of his experience and philosophy.

The third section of the Congress was occupied with the last three questions of the programme, Nos. V., VI., and VII., as follows:—

> "V. *Has experience established that certain forms of cataract can be cured without operation? In the affirmative, what are these forms and what are the means which may take the place of surgical means?*
>
> "VI. *Of what utility is palpebral occlusion in the treatment of diseases of the eye? What are the affections of the eye which demand its employment, and what is the best mode of practicing it?*
>
> "VII. A. *Would the existence of special establishments for the treatment of occular diseases be useful?* B. *Affirmatively, what conditions ought they to realize?*"

To the first of these questions we have the following answer, adopted without hesitation. It was endorsed with a very strong demonstration against the charlatanism which has ever tampered with the delusion of the curability of cataract without operation, as one of its most cherished opportunities in the miserable work of victimizing the unfortunate:—

> "If by the word *cataract* is understood the *spontaneous* opacity (or opacity supervening under the influence of causes whose action is still unknown) which is produced more or less rapidly, in the substance of the crystalline lens, we may reply without hesitation: NO, there is not any authentic fact on record in the annals of science to demonstrate that a cataract has ever retrograded or been arrested in its march under the influence of any medical treatment whatever.
>
> "If the denomination of *cataract* be applied to the opacities of the crystalline which are the sequel of traumatic lesions, there do exist some facts demonstrating that an energetic antiphlogistic treatment has succeeded in arresting the development of these opacities, in limiting their extent, or even in causing their diminution when already formed.
>
> "If, finally, by the word *cataract* is meant opacities of the capsule, which, in the immense majority of cases, not to say in all, are but secondary depots from inflammations of the iris or of the membrane of the aqueous humor, experience has shown that the disappearance of the opacity may often be obtained by the employment of a treatment adapted to these latter affections."

Question sixth refers to an expedient in treatment which has attracted much attention among ophthalmologists for some time past, especially among those who constituted the majority of the Brussels Congress. The discussion was an animated one and evidenced considerable difference of opinion as well as a great deal of special practical experience, all of which was reconciled in a brief decision, which is short enough to enable us to quote it in full:—

"Palpebral occlusion is intended to render the eyelids immovable; to withdraw the eyeball from the action of the air and of the foreign bodies therein suspended, and to hold it; to favor the action of remedies in prolonging their contact with the occulo-palpebral apparatus, and finally to admit of the maintenance at will of a fixed temperature.

"For these divers purposes, it may be useful in ulcers and perforations of the cornea; in protrusion of this membrane and hernia of the iris; in recent staphyloma; in ophthalmoptosis, and after certain operations performed upon the eye, such as of puncture and the operation for staphyloma; the operation for cataract; for artificial pupil, &c. Finally, much advantage also may be gained at times from the practice in ectropium, and in wounds with loss of substance of the external surface of the eyelids.

"The best mode of effecting it is that which responds most completely to the following conditions: To subject the eye to rest, and diminish as much as possible the rubbing between it and the lids; to confine it moderately, uniformly, and in such a manner as not to cause any pain; by no means to concentrate too much heat; to be renewable at will, without constraint or embarrassment, and to provide an outlet for the flow of healthy and unhealthy secretions.

"When the most complete immobility of the eye that is possible is desired, occlusion should be applied to both eyes, although but one may be affected."

The seventh and final question of the programme, relating exclusively to the utility and requirements of special hospitals for the eye, receives of course an affirmative answer. This emphatically demands in behalf of the well and the sick, the existence of special establishments for the treatment and the teaching of diseases of the eyes, as required by the interests of hygiene, therapeutics and science, and as a necessity of our epoch.

Then follow some details of construction and arrangement, advised as requisite in a well-ordered ophthalmic hospital, in addition to the general hygienic conditions proper to all hospitals.

"1. *General Exposure.*—One front to the east, another to the west.

"2. *Internal Distribution.*—(*a*) To be free from steps and other irregularities of the ground or floor against which blind patients might stumble.

"(*b*) The principal staircase should be wooden; should have equal, easy steps, straight landings, and railings on both sides.

"(*c*) Neutral, green, blue, and gray tints should form as much as possible the ground of the color of the walls and furniture.

"(*d*) Besides the wards or dormitories reserved for the lodgment of patients with non-contagious diseases, a few chambers, some for four beds, others for one or two, should be contrived, in which to place the patients operated on, and those having communicable diseases. These chambers should be furnished with green or dark-colored shutters, capable of regulating the amount of light.

"(*e*) Independently of out-door privies, inodorous water-closets should be placed on each floor for patients who are to be protected from exposure to the open air and injurious drafts.

"3. *Ventilation.*—As indispensable as in other hospitals, the ventilation ought to comply with the condition, so difficult to realize, of avoiding the creation of injurious drafts of air.

"Double doors, padded and listed, are very useful.

"4. *Grounds.*—The walks, yards, and gardens should be sheltered from the wind and the heat of the sun by thick trees.

"5. *Consultation and Operating Rooms.*—The chamber in which patients are examined or operated on, ought, as much as possible, to have but a single window, wide and facing north, in order to avoid the effects of light inevitable from any other disposition. Alongside of this chamber there should be a closet appropriated to ophthalmoscopic examinations."

In addition to the foregoing arrangements, amphitheatres, dissecting rooms, and other conveniencies are specified as needed for teaching purposes. It is also suggested that every medical community should have its own complete ophthalmic institute; and that the practitioners most familiar with ophthalmology should initiate the movement, each in his own country and place, in the confidence that they will find, in the municipal and general institutions, the support to which they shall prove themselves entitled.

Finally, a special chair of ophthalmology is recommended for each university or faculty of medicine.

In thus presenting a somewhat extended view of the formal decisions of the Congress, we have, as originally anticipated, exhausted our space so entirely as to be able only to refer to the many extremely interesting verbal and written communications from a large number of authoritative members and correspondents. We should have been glad, too, to have room for a few words upon the treatment of granulations, as suggested by the study of the debates and of the very elaborate and instructive memoirs, containing the results of a vast amount of intelligent and well-directed experience in different climates and countries as well as people. The subject of cataract also, and that of the ophthalmoscope, are treated, the one incidentally and the other formally, in such a manner and by such observers, as to suggest materials for separate reviews devoted to each topic, instead of the mere unsatisfactory mention with which we must content ourselves on this occasion.

The papers published in the Appendix occupy nearly three hundred closely printed pages, and are arranged in three different categories. Under the first of these (Memoirs on Military Ophthalmia) are twelve papers, some of them long, admirably arranged, and full of statistics on a very large scale, chiefly devoted to purulent and granular disease.

The next list (Memoirs on the State of Ophthalmology in different Countries) includes thirteen different articles, all interesting, and many of them full of statistical and historical as well as practical information; the first two (on Ophthalmology in America) being respectively from Drs. Gross and Littell, of Philadelphia.

The third division, under the caption of Various Communications, includes nine different contributions by as many authors; among which we notice an instructive and most complete paper, with marginal illustrations, on Ocular Prothesis or the Adaptation of Artificial Eyes, by M. Boissoneau, Sr., of Paris; one, also illustrated, on An Improved Method of Operating by Ligature for Staphyloma, by Dr. Borelli, of Turin; another, illustrated, by our countryman, Dr. Hays, of Philadelphia, describing his Knife-needle for the Division of Cataract; a note, by Dr. Delvigue, of Liege, on Ankyloblepharon, recommending as a remedial operation, the excision of a triangular flap of skin at the external commissure of the eye; a paper, by Dr. Kuchler, of Darmstadt, recommending a Mode of Treatment for Staphyloma and Chronic Inflammation of the Cornea; a note on a Simplification in the Operation for Cataract by Extraction, (dispensing with the incision of the capsule,) by Dr. Sperino, of Turin; a paper, by the same author, on Syphilitic Amaurosis, and on the Treatment, by Syphilization, of Syphilitic Ocular Affections; and a note on the same subject, by Dr. Boeck, of Christiania.

It is worthy of note that the only three American communications were sent from Philadelphia. Although interesting in themselves, they convey but little information as to the state of ophthalmology in this country. We regret, therefore, that the really able ophthalmotologists, in different portions of our Union, and especially in the larger cities, who are, undoubtedly, far more active than this meagre representation would imply, have neglected the opportunity to place themselves and their institutions in the proper light, by contributing to a general fund which has proved so rich a source of knowledge of what is being done for the advancement of their favorite branch in the greater part of the civilized world.

ART. III.—*Epilepsy and other Convulsive Affections, their Pathology and Treatment.* By CHARLES BLAND RADCLIFFE, M.D., Physician to the Westminster Hospital, etc. Second edition. 8vo., pp. 383. Churchill: London, 1858.

THE writer of this work, a bold and original thinker, evidently belongs to a class which, happily for the interests of practical medicine, is daily extending its ranks. He undertakes the investigation of certain important diseases of the organs of animal life, with a constant and careful reference to the physiology as well as the pathology of these organs. Convinced, as he assures us, that a sound physiology must ever go before a sound pathology, he precedes his remarks upon epilepsy and other convulsive disorders by certain considerations respecting the physiology of muscular motion. In fact, he divides his work into two parts essentially distinct, but mutually illustrative and explanatory. The first part occupies one-third of the volume, and is a thoughtful and elaborate attempt to demonstrate and establish a new theory of muscular contraction; a theory quite opposed to the prevailing one upon this subject, which, according to Dr. Radcliffe, involves a radical error, whose correction is absolutely necessary before we can attempt the satisfactory interpretation of epileptic disorders. The second part of the work is an essay of 254 pages upon the pathology, periodicity, and treatment of epilepsy and allied diseases. These two parts, however, are so arranged that it is optional with every one who may so choose, to read the practical portion of the work first, and then to turn back and ascertain how far the conclusions to which he is conducted by arguments of a purely pathological character—arguments which are complete in themselves—are borne out by the physiological portion.

The physiology being put forth as a novel basis for the pathology and therapeutics of the disease mentioned, we propose to present our readers with as complete a summary of it as our limits will admit.

The opinion at present entertained by most physiologists concerning muscular contraction is, that muscles are endowed with a vital property of contractility, and that muscular contraction is brought about when this property is called into action by certain agents, such as electricity or nervous influence. It is supposed, indeed, that this vital property of contractility is roused or excited or stimulated into a state of action when the muscle contracts, and hence the agents which thus rouse or excite or stimulate, are called stimuli. Haller, Hunter, Weber, Bowman, Burnett and others, have all, by their varied observations and experiments, endeavored to establish the physiological doctrine, now generally received, that this contractility is a vital property inherent in the living muscular fibre, and without which the latter would not be muscle. "This general property of contractility," writes Dr. Carpenter, "shows itself under two forms, which are alike distinct in the mode of their action, and in the conditions requisite for its excitation. Its most obvious and striking manifestations present themselves in the voluntary muscles and in the heart, which, when in activity, exhibit powerful contractions, tending to alternate with relaxations. The modification of contractility which is concerned in producing these, is distinguished as irritability. On the other hand, we find that the muscles exhibit a tendency to a moderate and permanent contraction, which is not shown by them when they are dead, and which cannot, therefore, be the result of elasticity, or of any simple physical property, and this contraction, instead of being consequent upon stimulation through the nerves, is especially excited by changes of temperature in the tissue itself. This endowment, which seems to exist in the greatest amount in certain forms of the non-striated muscle, is called tonicity." According to Bowman, "the contraction resulting from the exercise of the contractile force will be permanent, if no force from without be exerted to obliterate it by stretching; for a contracted muscle has no power of extending itself; there is no repellent force between its molecules." In opposition to these views, Dr. Radcliffe endeavors to show "that muscle contracts, not because it is stimulated to contract by nervous influence or electricity, or any other so-called stimulus of contraction, but because something has been withdrawn from the muscle which previously prevented the free action of common molecular attraction." This revolutionary doctrine he announced for the first time in 1851, in a work entitled "The Philosophy of Vital Motion." Four years later he returned to this interesting subject, in the first edition of the volume now under consideration, and giving more prominence to the pathological bearing of the theory, endeavored to show that epilepsy and all other disorders in which muscular contraction is in excess, are only intelligible when they are interpreted by such a theory of muscular motion.

In thus thinking that a great change is demanded in the theory of muscular action—a change which evidently amounts to no less than a complete revolution—our author does not stand alone; for it appears that Professors Matteucci of Pisa, Engel of Zurich, and Stannius of Rostock, have been led, by different circumstances, to entertain very similar ideas—at least so far as concerns the action of nervous influence in muscular motion.

According to Matteucci the nervous fluid "keeps the elements of muscular fibre in a state of repulsion analogous to that exhibited by electrified bodies. When this nervous fluid is no longer in a free state in the muscle, the elements of the latter are drawn together, as happens in cadaveric rigidity. The contraction is more or less decided, according to the quantity of fluid which disappears from the muscle." This hypothesis was communicated by Matteucci to the Academy of Sciences of Paris in 1847,* with an apologetic commentary concerning its vague and uncertain character. He appears to have been led to its conception partly in consequence of certain considerations which seemed to show that the phenomenon of "induced contraction" was owing to the discharge of electricity in the muscle in which the "induced contraction" was manifested—an idea originating with M. Becquerel—and partly in consequence of the analogy which he himself had found to exist between the law of contraction in muscle, and the law of the discharge in electrical fishes.

Observing that the muscles of frogs become more apt to contract under mechanical irritation when they are no longer under the control of the nervous centres, that the permanent contraction of rigor mortis is the state which supervenes when all signs of nervous influence are completely extinguished, and that cramps and other forms of excessive muscular contraction often happen spontaneously in paralyzed parts, Prof. Engel, in 1849, announced his views upon the influence of the nerves in the production of muscular motion in the following language:—"The function of the nerve is not to cause contraction of the muscle, but to a certain extent to counteract or oppose contraction. In the living organism, in which rest is an impossibility, a quiescent or inactive muscle or nerve is not to be imagined. The constant tendency of the muscle to contraction is prevented by the nerve, which continually endeavors to reduce the contraction of the muscle to an exact measure. From these two contradictory properties of the nerve and muscle results what is known as the condition of rest or equilibrium,—called also, in the muscle, tonicity. The removal of this equilibrium is followed either by motion or by paralysis. Motion is produced either by a reduction of nervous power, or by a direct increase in the contracting power of the muscles. Muscular paralysis results either from the immediate destruction of the contracting power of the muscle, or from an undue increase in the influence of the motor nerve over the muscle. The presence of a living nerve is indispensable to alternate muscular contractions, and these contractions continue so long as life is present in the nerves; when it disappears, the muscle contracts without opposition, giving rise to the condition known as rigor mortis."†

In 1852 Prof. Stannius, reflecting upon the manner in which *rigor*

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* Comptes Rendus, March 17th, 1847.

† Ueber Muskelreizbarkeit. Zeitschrift der Kais-Kön, Gesellsch. des Aertze zu Wien, 1849.

mortis is relaxed by blood, announced in Vierordt's *Archiv*, "that the essential task of the motor nerves is to reduce the natural elastic volume of the muscular fibres, and to make their elasticity more complete; that active muscular contractions indicate a regulated, limited, and momentary remission of nervous influence; and that the customary reference to muscular irritability is entirely useless."*

It will thus be seen that a new and remarkable theory of muscular motion is beginning to assume a definite shape in the minds of physiologists.

Our author commences the discussion of this theory by laying down the following propositions:—

> "1. That muscular contraction is *not* produced by the stimulation of any property of contractility belonging to muscle.
>
> "2. That muscular elongation is produced by the simple physical action of certain agents, electricity and others, and that muscular contraction is the simple physical consequence of the cessation of this action.
>
> "3. That the special muscular movements which are concerned in carrying on the circulation—the rhythm of the heart, and the movements of the vessels which are independent of the heart—are susceptible of a physical explanation when they are interpreted upon this view of muscular action."

These propositions are treated separately and at considerable length. In discussing the first, Dr. Radcliffe attempts to show that electricity, nervous influence, the blood, chemical and mechanical agents, light, heat, and cold, either singly or combined, do not produce muscular contraction, but on the contrary give rise to relaxation or elongation of the muscles.

To electro-physiologists it is well known that the researches of Galvani, Volta, Humboldt, and especially of Matteucci and Du Bois-Reymond, have demonstrated the existence of electric currents in muscles in a state of rest,—these currents proceeding sometimes from the origin toward the insertion of the muscle, and sometimes pursuing the reverse course. It is known, also, that the direction of the current may be changed by reversing the muscle, that the current is weakened by contraction of the muscle, and disappears altogether when the latter has lost its "irritability" and passed into the condition called rigor mortis. Having premised these facts, most of which he has experimentally confirmed, Dr. Radcliffe proceeds to set forth his peculiar views relative to the influence of electricity in muscular motion, in the following language, which we quote entire that our readers may have the whole argument before them:—

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* Untersuchungen über Leistungsfähigkeit der Muskeln und Todtenstarre; Vierordt's Archiv für Physiol. Heilkunde; Stuttgart, 1852.

"On turning from these considerations to those which concern the action of the ordinary galvanic current upon muscle, it is to be expected that the existence of the muscular current is not to be ignored. And further, it is to be expected that certain reactions between the two currents will arise out of the particular course of the muscular current. It is no doubt true, as Dr. Du Bois-Reymond represents, that the muscular current passes from the end or ends to the sides of the muscular fibre; but it is also true that this current must complete its circle and return to the point from which it started. It is certainly true that the muscular current cannot have reached the ends of the fibre without having first reached the interior of the fibre, and that it cannot have reached the interior without having first passed through the exterior of the fibre. In other words, it is certainly true that the muscular current, in passing from the sides to the ends of the fibre, must have reached the interior by passing in a more or less *transverse direction across the exterior parts of the fibre.* Now, if such be the course of the muscular current, it is evident, first of all, that there is no way of passing the galvanic current through a muscular fibre in which this current will not cross the course of the muscular current. The galvanic current, it is true, will not always cross to the same extent, and to a certain point it may coincide with the course of the muscular current, as it will do when it passes along the interior of the fibre in the direction in which the muscular current is predominant—when it passes, for example, in an *upward* direction through the gastrocnemius; but if it coincides with the muscular current in its course along the *interior* of the fibre, it must cross the muscular current in that part of its course where, in order to reach the interior, it passes more or less transversely through the *exterior* of the fibre. And if the two currents cross in this manner, then must they clash, and (to an equivalent degree) neutralize each other. In a word, it is not enough to regard the muscle as a simple conductor, through which the galvanic current has to pass and take possession; but it is necessary to regard it as the seat of a current which must be overcome before the galvanic current can pass and gain possession. Nor it is not enough to say that the muscular current returns when the galvanic current is suspended. The muscular current does return at this time—of this there can be no doubt; but there is also another current which springs into existence at the same time, and this is the ordinary *reverse* current which arises out of the secondary polarity of some part of the circuit. Just then, as the muscle could not be looked upon as a simple conductor at the moment when the primary galvanic current began to pass, so now, it cannot be looked upon as a simple conductor at the moment when the muscular current returns to the muscle; for before the muscular current can regain possession of the muscle, it must contend with and overcome the reverse current above mentioned. It is evident, indeed, that there will be a clashing and equivalent neutralization between the muscular current and the reverse galvanic current at the moment when the circuit is opened, which is in every respect similar to that clashing and neutralization which took place between the muscular and primary galvanic current at the moment when the circuit is closed; and hence a moment in which electrical action is neutralized—a *moment of inaction*, as it may be called—may be supposed to precede both the establishment of the galvanic current and the return of the muscular current.

"What, then, it now remains to ask, are the phenomena which attend upon the passage of the galvanic current through the muscle, and how are they to be accounted for? The principal fact is, that a muscle contracts when the circuit is closed and when the circuit is opened, but not during the time that the current is passing through it. Thus, in an experiment of Professor Matteucci, in which a galvanic current was passed through the pectoral muscle of a pigeon from which every visible trace of nervous tissue had been carefully removed, the muscle was found to contract at the moment the circuit was closed and at the moment the circuit was opened, but not during the passage of the current; and this order was found to be altogether irrespective of the direction of the current. In this experiment it was also found that the contraction on opening the circuit was less marked than the contraction on closing the circuit; that both contractions became progressively less and less marked until they ceased altogether; and that one or both of the contractions might be revived for a short time after their extinction by increasing the strength of the current.

"Now in seeking for the explanation of these phenomena it is difficult, if not impossible, to find any reason for supposing that the contractions are due to any direct action of the current, natural or artificial. For what is the case? The case is that the muscle does *not* contract so long as the galvanic current continues to pass through it. The case is that the muscle does *not* contract so long as it is left to the undisturbed possession of the muscular current. But, on the other hand, there is no difficulty in connecting the contractions with that clashing and mutual neutralization of the muscular and artificial current, direct or reverse, of which mention has been made as attending upon the commencement and cessation of the passage of the artificial current through the muscle; for if contraction is absent when the artificial or natural current is manifestly present, and if contraction is present when the artificial or natural current is manifestly absent, then there appears to be only one course open, and that is to connect the contraction with the *absence* of the current.

"Upon this view, also, it is intelligible that the contractions should become less and less marked as the experiment proceeds, and that the contraction on opening the circuit should be less marked than the contraction on closing the circuit. Removed from the body, the muscle is found to yield fainter and still fainter indications of a current until these indications cease altogether, and hence it follows that the neutralizing reaction between the muscular current and the artificial current will fail more and more as the experiment proceeds,—will fail, because to diminish this current is evidently to diminish the amount of reciprocal neutralization,—and, so failing, that the contractions will become progressively less and less marked; for if the contraction is connected with the neutralization of electrical action in the muscle, the degree of the contraction must be directly proportionate to the degree of this neutralization. It is, also, intelligible that the contraction on opening the circuit should be less marked than the contraction on closing the circuit, for the lapse of time and the disturbing influence of the artificial current upon the electromotive elements of the muscle will combine to weaken the muscular current—will combine, that is, to render the contraction on opening the circuit less marked than the contraction on closing the circuit; for—to repeat what has just been said—to weaken this current is to diminish those neutralizing reactions between the two currents, which, upon this view, are directly measured by the degree of the contraction.

"Nay, it is in some degree possible, upon the same view, to explain the fact that the contractions should be reproducible, after they have once ceased, by increasing the strength of the artificial current; for in order to explain this difficulty, it is only necessary to suppose—and the supposition is certainly allowable—that the weaker current had only penetrated the muscle superficially, and that the stronger current had penetrated more deeply and reacted with the current of muscular fibres which had been beyond the range of the weaker artificial current. This supposition is certainly allowable, for current electricity, although of very low tension, must yet possess some tension, and on that account it must agree in some degree with electricity of tension in preferring to occupy the surface of the body which serves as a conductor.

"There is, no doubt, much that is not altogether satisfactory in some of these speculations, and it cannot well be otherwise until a clearer knowledge of electricity is brought to bear upon the subject; but at the same time it must be evident that there is no reason for believing that muscle is stimulated into the state of contraction by electricity, and that this state of contraction passes off when this stimulation is at an end; and it may also be allowed that there is some reason for concluding that muscular elongation, and not muscular contraction, is the state which is produced by the action of electricity upon the muscle.

"Nor is there any objection to this view in the physical condition of the contracted and uncontracted muscle. At first sight, indeed, it would appear as if a stimulus had ceased to act when the muscle passes out of the contracted state, and it is no easy matter to get rid of this idea; but Professor Ed. Weber has shown, not only that the hardness of muscle in a state of contraction is simply owing to the straining of the muscle upon its attachments, but also that the contracted muscle is even softer than the uncontracted muscle when it is cut loose from these attachments. In other words, he has shown that the condition of the uncontracted muscle may be more correctly represented by the term *elongation* than by the term *relaxation*,—and hence the mere physical condition of the muscle does not oppose any objection to the idea that muscular elongation, and not muscular contraction, is produced by the action of electricity upon muscle."

Our author next endeavors to show that muscular contraction is not produced by the stimulation of nervous influence. He tells us that the term "nervous influence" is a convenient one, which includes certain agents thought to be vital, and others which fall within the scope of physical inquiry. Believing that there is one common force underlying all these agents, whether physical or vital, and that of them all electricity is the one most easily investigated, he proceeds to interpret the mode in which muscle is affected by "nervous influence" from an electrical point of view.

To Dr. Du Bois-Reymond belongs the honor of demonstrating for the first time in a masterly and complete manner, the existence of actual electrical currents in nerves. By means of the small galvanometer employed by him in the investigation of muscular currents, he demonstrated the existence of a current passing from the end to the side of the nerve. Reversing the position of the nerve does not affect the direction of the current, but when the nerve is doubled into a loop, and the ends brought together, then two currents are observed to set from the ends of the nerve. The phenomena of the "nerve current" appear to be precisely similar to those of the "muscular current"—except that no evidence of a current could be found between dissimilar points in the transverse section of the nerve. This difference our author is inclined to attribute to the smallness of the nerve. These electrical phenomena may be observed in purely motor and sensory nerves, as well as in mixed nerves like the ischiatic. The nerve current, like the muscular current, dies out *pari passu* with the irritability, and the extinction is complete when the latter has entirely disappeared. The extinction of the current does not appear to be preceded by any reversal of its direction. According to Dr. Radcliffe, there is such a reversal if the nerve current be examined in a nerve which retains its connection with the muscle, and this equally whether the irritability has been allowed to die out gradually or whether it has been suddenly exhausted by a series of alternating shocks from an induction coil. He assures us that this reversal is in some way connected with the reversal of the muscular current, for it ceases when the nerve is removed from the muscle, and is never manifested when the nerve current is investigated from the beginning in a separated nerve. From the observations of Dr. Du Bois-Reymond it also appears that the nerve current becomes enfeebled during muscular contraction. In this respect it resembles the muscular current. When a portion of a nerve is included in the circuit of a simple galvanic apparatus a current is set up not only in this portion, but also in every part of the nerve. At the same time the muscles of the part are seen to contract when the circle is opened and closed, and to remain elongated so long as the current continues to pass.

> "At first, no very marked differences in the degree of these two contractions are produced by changing the direction of the current. Afterwards, when the excitability of the nerve has become diminished, there begin to be certain differences in the degree of these contractions, which differences are determined by the direction of the current in the nerve,—the law being, first, that the contraction on opening the circuit is more marked than the contraction on closing the circuit, *when the current is said to be 'inverse'*—when, that is, it passes from the expansion to the origin of the nerve; and second, that the contraction on closing the circuit is more marked than the contraction on opening the circuit,

when the current is said to be 'direct'—when, that is, it passes from the origin to the expansion of the nerve.

"If the current be *direct*, that is, from the origin of the nerve to its expansion, and if it be passed for some time continuously, and the circuit then opened and closed, the opening and closure of the circuit are not attended by any contractions in the muscular fibres; but if the current be *inverse*, that is, from the expansion to the origin of the nerve, this is not the case; and provided the galvanic current be not too powerful, the current may be passed through the nerve for a much longer time than in the last instance, and the contractions may still attend upon the opening and closure of the circuit. Instead of exhausting the excitability of the nerve, as did the *direct* current, it would indeed seem as if the *inverse* current had augmented this excitability; and this was the opinion of Professor Matteucci, who first directed attention to these differences in the effects of the direct and inverse currents. At any rate, there is a *marked* contraction on opening the circuit after the *inverse* current has been passing for some time through the nerve.

"At first sight, perhaps, it is difficult to understand how it is that the artificial current should act so differently according as it is passed up the nerve or down the nerve, but on referring to the particular reactions which must take place between the galvanic current and the nerve current under these circumstances, this difficulty is done away with.

"*When the circuit is closed*, the galvanic current will pass across the course of the nerve current, and so passing it will neutralize and receive an equivalent amount of neutralization from the nerve current. And thus an instant of neutralization, a moment of inaction, will precede the establishment of the galvanic current in the nerve. *When the circuit is opened*, the galvanic current will be suspended, and the nerve current will return to the nerve; but before the nerve current can thus return, it will have clashed for an instant with that *reverse* current which springs into momentary existence and traverses the nerve and other portions of the galvanic circuit upon the cessation of the primary galvanic current. In other words, the re-establishment of the nerve current after the cessation of the artificial current, will also be preceded by an interval of inaction, in which the first installments of the nerve current and the momentary reverse current suffer that reciprocal neutralization which arises out of the differences of their direction. And hence it would appear that there is some neutralization of electrical action in the nerve at the moment of closing and at the moment of opening the circuit, and that the nerve is only under full electrical action either when the artificial current is passing through it, or when the nerve is left to the influence of its own current.

"Looking at muscular action, then, in relation to the *electrical* changes of the nerves concerned in this action, it would seem that muscular elongation is coincident with the *action* of natural or artificial electricity upon the nerve, and that muscular contraction is connected in some way with the diminution or annihilation of this action; and no reason has yet arisen which can support the idea that any vital property of nerve has been called into active exercise during the time of contraction by the 'stimulus' of electricity."

Dr. Radcliffe next adduces from the writings of Brown-Séquard, Martin Magron, and Engel, a number of facts and experiments to show that muscular contraction is not produced by any stimulation derived from the nervous centres. He thinks that the will influences muscular action not so much by imparting anything to the muscles, but by withholding something from them.

Dr. Radcliffe next proceeds to show that muscular contraction is not produced by the stimulation of blood. For the proofs of this proposition he appeals first to comparative anatomy, which teaches us that the degree and duration of muscular contraction are greater in the voluntary muscles of fishes and reptiles than in the voluntary muscles of mammals and birds; greater in involuntary than in voluntary muscles; and greater in animals in a state of hybernation than in a state of activity. He refers next to the experiments of Brown-Séquard[*] and Stannius[†] in proof of the fact that rigor mortis may be relaxed, and the lost irritability restored to the muscle by the injection of blood into the vessels. The views of Dr. Brown-Séquard, concerning the different effects produced by arterial and venous blood upon muscular tissue, are then animadverted upon. This observer has been led by many experiments of his own to the conclusion that arterial blood in providing for the nutrition of the muscle also supplies it with contractile power, with motility or irritability; while the venous fluid, in virtue of its carbonic acid acts as a stimulus, and serves to arouse this irritability and bring it into action. Some of the arguments and experiments upon which this opinion is based are briefly referred to by our author, who thinks that "they are very far from showing that muscle is stimulated to contract by venous blood." He questions whether the convulsions of asphyxia are not rather due to the want of the stimulus of red blood than to any stimulus derived from the black blood with which the system has become charged; and he observes, what is certainly true, that the muscles are similarly convulsed when an animal is bled to death. The more powerful contraction of the left ventricle during the first moments of asphyxia—a fact which Brown-Séquard cites in favor of his theory, and which he thinks is due to an increase in the stimulating influence of venous blood—is attributed by Dr. Radcliffe to "some impediment to the free flow of blood through the capillaries of the systemic circulation—an impediment by which the systole of the ventricle is made to expand itself with greater force upon the coats of the intermediate arteries." Dr. Radcliffe also reminds us "that the uterus has often contracted and expelled its contents when a pregnant animal has been bleeding to death. And there are several cases on record in which the human uterus even has expelled its burden after the mother has yielded to the utter syncope of actual death."

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[*] Comptes Rendus, 9 et 25 Juin, 1851.

[†] Archiv für Physiologische Heilkunde; Stuttgart, 1852. Heft. i.

In the next section, our author attempts to show that muscular contraction is not produced by the stimulation of any mechanical agent. His arguments upon this point are so purely speculative and hypothetical, and withal so imperfect and unsatisfactory even to himself, as he acknowledges, that we are constrained to pass them over without further notice.

He thus briefly alludes to the influence of light upon muscular contraction :—

> "Regarding the question generally, contraction would seem to be favored by darkness rather than by light. It is in the darkness, and not in the light, that contraction takes place in the irritable cushions of the untouched sensitive plant; and it does not seem to be far otherwise with the iris, for it is as easy to suppose that the radiating fibres of this organ elongate under the influence of light, and in that way close the pupil, as to suppose that this curtain is closed by sphincter fibres, which have a very doubtful existence. At all events, this explanation is supported by the authority of Bichat; it equally accounts for the phenomena: and it harmonizes with the known influences of light upon the cushions of the sensitive plant."

Muscular fibre may be subjected to considerable variations of temperature without contracting; but if its temperature be elevated or lowered very much, it immediately contracts.

> "Now," says Dr. Radcliffe, "there is reason to believe that the 'muscular current' is more or less suspended by a temperature which is higher or lower than a given point, and not by intermediate degrees of temperature, and that the presence or absence of contraction in these experiments may be accounted for by the suspension or non-suspension of the 'muscular current.' Professor Matteucci has shown that the 'muscular current' is suspended by a low temperature, and hence, according to the premises, it is intelligible that the muscle may contract under a sufficient degree of cold. On the other hand, I find that the muscular current is weakened to the last degree, or altogether extinguished by the amount of heat which is sufficient to produce contraction in the muscle. In this experiment I placed the gastrocnemius of a frog across the cushions of the galvanometer, and having laid the end of a small straight band of watch-spring upon it, I raised the temperature of the band by applying a spirit-lamp to the other end. It is intelligible, therefore, that muscle should contract under a temperature which is higher or lower than a given point, and that it should not contract under those intermediate degrees of heat which are not sufficient to weaken the 'muscular current' to the point which allows of contraction."

In the seventh section, after attempting to show that muscular contraction is not produced by the stimulation of any chemical or analogous agency, our author thus sums up his argument :—

"Reviewing the whole evidence, then, there appears to be no reason why *rigor mortis* may not be taken as the type of muscular contraction in general. For what is the case with respect to this form of muscular contraction? The case is simply this. As long as there is any trace of that action of which the 'muscular current' is a sign, so long is there no *rigor mortis*. As long as there is any trace of that action of which the 'nerve current' is a sign, so long is there no *rigor mortis*. If this action dies out speedily, as in persons in whom the vitality of the frame has been exhausted by long life, or by chronic disease, such as consumption, the muscles become speedily rigid; if this action dies out slowly, as in persons who have been cut down suddenly in the full glow of life, the muscles are equally slow in becoming rigid. Once contracted, moreover, the muscles remain contracted until they break up in the ruin of final decay,—an event which happens most speedily in the case where the muscle retains its physical integrity least perfectly. And this is precisely as it should be according to the premises, for according to the premises all that is necessary to the commencement of *rigor mortis* is the cessation of that action of which electricity is a sign, and all that is necessary to its continuance is the absence of this action and the physical integrity of the muscular fibre. In a word, it is possible to explain those unexplained and seemingly contradictory facts which constitute the distinctive features of that contraction into which the muscles pass after death; and hence *rigor mortis* may be accepted, not only as a type of muscular contraction in general, but as an *experimentum crucis* in favor of the proposition—that *muscular contraction is not produced by the stimulation of any contractile power belonging to muscle.*"

Thus much for the first proposition. In attempting to establish the second—that muscular elongation and contraction are simple physical phenomena—a comparison is instituted by our author between the changes which a muscle undergoes in the act of contracting, and those purely physical alterations in form and volume exhibited by many crystalline bodies when subjected to the influence of heat. Under this influence these crystals increase in length and lose in breadth, with but slight change in volume. As the muscle does not alter its volume, but gains in breadth what it loses in length, the analogy sought is imperfect and partial. But Dr. Radcliffe refers us, for a more direct and satisfactory illustration of muscular contraction, to the changes produced in a bar of iron under the influence of magnetism,—changes which consist, as in the case of a contracting muscle, in an increase of length and loss of breadth without any alteration of volume. For the knowledge of these interesting facts concerning magnetized iron, we are chiefly indebted to Mr. Joule, of Manchester, for a detailed account of whose very numerous and exact experiments the reader is referred to the *Philosophical Magazine* for February and April, 1857.

"The changes which take place in a bar of iron under the influence of magnetism are paralleled, therefore, by the changes which take place in muscular

> fibre, for while the fibre increases in length and loses in breadth, under the influence of electricity and its associate agencies, and loses in length and gains in breadth when this influence is withdrawn, so likewise does the bar of iron increase in length and lose in breadth under the influence of electricity, and lose in length and gain in breadth when this influence is withdrawn. And not only is this parallelism preserved in the changes of shape and in the agencies concerned, but it is preserved in that point which is so characteristic of muscle, namely, the *suddenness* with which the contracted and elongated states may alternate upon each other,—for in Mr. Joule's experiments the bar was seen and heard and felt to *jump* into the longer form, and then to jump back again into the shorter form, as the electricity was communicated to or withdrawn from the coil."

It would appear that a contracting muscle and a magnetized bar of iron exhibit analogous, if not indeed homologous phenomena, as Dr. Radcliffe contends. But several interesting questions here present themselves. How, for example, can we explain the diminished degree of shortening exhibited in the post-mortem contraction of a muscle, except upon the supposition that the contractile power is a vital endowment? How may we account for the loss of contractile power consequent upon death? Why does the muscle lose its power in proportion to the degree of contraction? If contraction is a mere physical process, and not a vital act, why does the muscle undergo disintegration and waste in a degree proportionate to the number and activity of its contractions? Dr. Radcliffe anticipates and attempts to clear away these objections to his theory by various arguments, which, though more or less plausible, are by no means of sufficient weight to carry conviction to our mind.

The third and last proposition which our author attempts to establish is, as we have already seen, "that the special muscular movements which are concerned in carrying on the circulation are susceptible of a physical explanation."

In the discussion of this proposition an attempt is first made to solve the "riddle of the heart's action"—that mysterious riddle which from the days of Harvey down to the present time has so profoundly taxed the ingenuity, experimental skill, and reasoning powers of so many, and such able physiologists.

Dr. Radcliffe contends that the systole of the ventricles is not produced by the stimulation of arterial blood, but that, on the contrary, the blood induces the diastole while it antagonizes the systole. He thinks that—

> "The oxygen of the arterial blood, injected into the coronary arteries by the systole of the left ventricle, and acting upon the muscular and nervous elements of the coats of the heart, produces the diastole by rousing (among other things) the muscular and nerve currents, or, in other words, by rousing the polar con-

dition of the muscular and nervous fibres; and that the systole follows the diastole in consequence of the failure of these currents, when the arterial blood has parted with its oxygen, and so ceased to be sufficiently stimulating. And if, under ordinary circumstances, the blood acts in this manner, then there appears to be no great difficulty in understanding how it is that the heart, or a portion of the heart, may go on pulsating after removal from the body. For why should oxygen dissolved in the blood act differently from oxygen diffused in the air? Why, for instance, should not the air, which bathes the surface and permeates every interstice, provoke a diastolic state in the separate heart or a fragment of the same, by rousing that polar condition which in the nerves and muscles is designated under the name of the nerve and muscular currents? Why may not the systolic state supervene upon this diastolic state when the polar condition fails, in consequence, as it were, of the arterial air having become converted into venous air? And why, again, should not the diastole return after every systole, so long, that is, as the muscle is capable of responding to the action of the oxygen, for it may well be supposed that the commotion of the systole will displace the venous air and bring the muscular and nervous tissues into relation with fresh quantities of arterial air? Assuredly there is no evident reason to the contrary, and there is one reason why this view should be received, and this is to be found in the fact that the rhythm is rendered more rapid, and even revived for some time after its actual cessation, by placing the heart in oxygen instead of atmospheric air, and that it is brought to a stop by placing the heart in a vacuum or by immersing it in hydrogen or nitrogen or carbonic acid.

"It may be assumed, also, that the same view is no less applicable to the explanation of other kinds of rhythmic motion, for it is easy to perceive that these different forms may depend, on the one hand, on differences of structure—differences in the kind of irritable fibre or substance, in the presence or absence of nerves, in the number of blood-vessels, or in the amount of exposed surface—and, on the other hand, upon the different rates and degrees of oxidization which are consequent upon these differences of structure."

Finally, he maintains that the muscular coats of the blood-vessels are stimulated to contraction neither by blood, nor nervous influence, nor heat, but that these agents really antagonize contraction and produce elongation of the vascular muscular fibres, and consequent expansion of the vessels.

The second part of the work before us is divided into five chapters, which are severally devoted to the consideration of Simple Epilepsy, Tremor, Simple Convulsion, Epileptiform Convulsion, and Spasm.

In the first chapter, after discussing the history and symptoms of simple epilepsy, Dr. Radcliffe attempts to show that the pathology of this affection is in keeping with the theory of muscular contraction above set forth. He assures us that post-mortem examinations reveal no constant anatomical lesions in simple epilepsy; that the cerebral congestion sometimes discovered is rather consequent upon than a precursor to the disease; and that in cases of the latter, complicated with insanity, the signs of inflammation of the brain and its membranes are clearly referable to the mental disorder, and "this for no other reason than they are as common, or more common in insanity without epilepsy, than in insanity with epilepsy." He thinks, however, that certain other anatomical characters which belong to dementia, such as pallor of the gray matter, softening, induration, atrophy, dropsical effusion, etc., furnish some grounds for supposing that epilepsy is caused by them, since the demented state is intimately connected with convulsive disorder, for if a demented person be not epileptic, he is almost sure to be afflicted with palsied shakings, or cramps, or spasms, in one form or another. He maintains that—

> "The phenomena connected with the vascular system are altogether opposed to the idea of arterial excitement in epilepsy. It would seem, indeed, as if the spasms, as well as the loss of consciousness and sensibility, were connected with a deficiency of arterial blood; for, in the first place, there is a state closely approaching to syncope, and in the next place, a state of positive suffocation, or arrested arterialization of the blood. It is not improbable, also, that the blood may have been previously rendered less stimulating than it ought to be by the imperfect exercise of some organ of excretion. The phenomena, indeed, are in harmony with the previous considerations respecting muscular action, for, according to them, the office of the blood is to antagonize contraction, not to cause it.
>
> "Nor does there appear to be any reason for supposing that venous congestion has a more important part to play in the production of epilepsy than that which has been assigned to arterial injection. No doubt the veins of the brain and head generally are congested from a very early moment, but there is a moment antecedent to this in which the death-like paleness of the face—in many cases at least—is a sufficient proof that the veins were emptier than usual before they became congested. Indeed, it may be supposed that this was the case in the majority of instances, if not in all, for there would seem to be no way of accounting for the instantaneous loss of consciousness and sensibility (which is in reality the first phenomenon of the fit) except upon the supposition of some sudden failure in the supply of blood to the great nervous centres."

To the inefficient action of these centres is ascribed the morbid irritability of the nervous system so well marked in the epileptic.

In the treatment of simple epilepsy, Dr. Radcliffe strongly advocates a nutritious animal diet, a liberal allowance of alcoholic stimulants, the free use of coffee, continence in sexual matters, the avoidance of much mental exertion, whether in study or otherwise, and the employment of but little bodily exercise. The first and last of these particulars are opposed to the well-known views of Dr. Brown-Séquard concerning the causes and treatment of epilepsy. This observer ascertained experimentally that in epileptic animals the number of fits in a given time is generally in direct proportion to the quantity of food taken; and that there is an inverse proportion between the amount of exercise and number of fits.

The remedies most commonly employed at present in the medical treatment of epilepsy are oxide of zinc, ammonio-sulphate of copper, and nitrate of silver. In the remedial efficacy of these substances our author has no faith whatever. He has used them without success. His friend, Dr. Marcet, has given the oxide of zinc an extended trial at the Westminster Hospital, but with similar results. In the Bicêtre, M. Moreau treated eleven adult epileptics with the oxide, but failed to cure any of them. M. Herpin, who originally introduced the zinc and copper treatment, has himself become much less confident of the efficacy of the oxide of zinc than he was in 1852.

> "Now these three remedies, zinc, copper, silver, belong to the group of diamagnetic bodies—of bodies, that is to say, which tend to arrange themselves at right angles across the magnetic meridian. They belong, indeed, to a group in which some of the companion metals are bismuth, antimony, zinc, tin, sodium, mercury, lead, silver, copper, gold, arsenic. They belong to a group of metals, that is to say, which are all more or less sedative in their action, and this possibly may be one explanation why the result of their use in epilepsy has not been more satisfactory; for after what has been said upon the pathology of this affection, it is scarcely to be expected that a sedative remedy of any kind will be that which best suits the requirements of the case. And if this inference be correct, is it to be expected that a remedy may be found among the magnetic bodies—among bodies of which iron, nickel, manganese, cobalt, take the highest rank?"

Iron has been recommended by Dr. Watson, and quinine by Rostan and Piorry. Dr. Radcliffe has used both these articles with great success. Latham, Foville, Perceval, and Watson, speak very highly of the use of oil of turpentine in epilepsy, in doses varying from half a drachm to a drachm every six hours. Dr. Radcliffe tells us that he has had abundant evidence of its value in this disease. He attributes its efficacy to its stimulating effects upon the circulation. The nauseous taste of this article, however, and the irritation which it occasionally sets up in the urinary and generative organs, constitute a serious objection to its use. Valerian, originally recommended by Aretæus and Dioscorides, and used ever since, is considered by our author as decidedly inferior in value to the turpentine. He speaks disparagingly also of strychnia, belladonna, digitalis, indigo, cotyledon umbilicus, selinum palustre, poudre de Neufchâtel, (*taupe grillée* or fried mole,) and bromide of potassium. All these substances have been exhibited in epilepsy, but with occasional benefit only. Compression of the carotids, advocated by Romberg and Sieveking; tracheotomy, proposed and practiced by Marshall Hall; and cauterization of the larynx, suggested and performed by Drs. Brown-Séquard and

Ebenezer Watson, meet with but little approval from our author. At times, and in certain peculiar cases, they may be of use, but they never can be relied upon as valuable methods of relief. Dr. Radcliffe strongly recommends naphtha, camphor, chloric ether, Hoffman's anodyne, and aromatic spirits of ammonia, either singly or combined with each other, or in combination with iron and quinine, according to the special indications of the case. Under the use of these remedies he found that the general health was improved in every case, the spirits became more equable and cheerful; headache disappeared; the pulse acquired increased power, and the warmth of the body was maintained with less difficulty and greater uniformity. An improvement in the fit was always contemporaneous with this improvement in the general health, at least in this—that the coma attending the fit became less and less profound, and the subsequent oppression or bewilderment or headache less and less distressing. He assures us also that in many cases the fits were not only lessened in severity by being deprived of their most ominous characteristic, coma, but the intervals between the fits were lengthened to such a degree as to afford good ground for supposing that the fatal habit might be altogether broken by a continuance of the same treatment.

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ART. IV.—*A Treatise on Fractures.* By J. F. MALGAIGNE, Chirurgien de l'Hôpital Saint-Louis, Chevalier de la Legion d'Honneur et du Mérite Militaire de Pologne, Membre de l'Académie Royale de Médecine. With one hundred and six illustrations. Translated from the French, with notes and additions, by JOHN H. PACKARD, M.D. Philadelphia: J. B. Lippincott & Co., 1859. Octavo, pp. 684.

THE Treatise on Fractures of M. Malgaigne, now Officer of the Legion of Honor and Professor of Operative Surgery in the Paris School of Medicine, was published in 1847. The author states in his preface that it was written with the object of filling a gap in French surgical literature. He accomplished his intended purpose, and more than did so, for the work he has erected must be regarded as a monument, conspicuous and to be admired, even among the noble monuments of the medical literature of his country. As a solid, complete, substantial, highly finished work, we know of none that is its superior; it can, with justice, be regarded as a model in scientific literature.

It is a work, also, so well known to many of the readers of this REVIEW that we almost hesitate to present in its pages any analysis of its contents; and feel inclined to do no more than announce an American translation, and add some observations on the notes and additions of the translator, and the manner in which he has performed his task. As, however, there are many readers who, until the publication of this translation, have been debarred from its acquaintance, by want of familiarity with the language in which it was written, we will make a brief statement of its contents.

The whole volume is divided into nineteen chapters; one of them, the first, treats of fractures in general; the others, of fractures of particular bones.

The first chapter treating, as just said, of fractures in general, occupies 271 out of the whole 660 pages occupied by the text of the book. It is divided into seven separate articles, devoted respectively to the causes of fractures, their varieties, their general symptoms, their course and terminations, diagnosis, prognosis, and treatment. Each article is divided again into a number of separate paragraphs; for example, article iv., or that treating of the course and terminations of fractures, is divided into five paragraphs, treating respectively of the exterior phenomena, of the formation of the callus, of the transformations of the callus, the theory of anchylosis following fracture, and of non-union or false-joint after fracture. The chapters devoted to the fractures of particular bones are equally complete and arranged with equal care and method. That upon fractures of the femur, for example, is divided into as many as nine separate paragraphs, treating respectively of intra-capsular fractures of the neck, extra-capsular fractures of the neck, fractures of the great trochanter, fractures just below the trochanters, fractures in the middle third of the femur, fractures just above the condyles, fractures of one condyle, fractures of both condyles at once, and compound fractures of the femur.

The great character which M. Malgaigne sought to give his work was that of *reality;* that is, he desired to make it a work of truth—not of the imagination, a work founded upon facts—not one composed merely of theories. "In a historical point of view," he says, "I have aimed at presenting a *resumé* of all the doctrines and ideas maintained from the earliest times to our own day, having recourse as much as possible to the original works. As to my teachings, I have asserted nothing unsupported by facts, drawn either from my own experience or from that of others. When clinical observation was insufficient, I have sought a substitute for it in experiments upon dead bodies, or upon the lower animals; but, above all, I have tried to clear up a great many mooted points by throwing upon them the light of pathological anatomy; and this is the object of my atlas," (p. 16.) For the task he has accomplished so well, M. Malgaigne was, in many respects, peculiarly fitted. He is a man not only of thorough study, of extensive learning, and of prodigious industry, but he is also a man who thinks for himself; he is noted in France as a man of *opinions tranchées,* a man decided in his opinions. It is always satisfactory in a dogmatic treatise, whatever may be the array of authorities cited, to have also given that of the author himself. Among the authorities repeatedly mentioned in this work, it is a matter of real gratification to remark the frequency with which the names of some of our own most distinguished surgeons occur, particularly those of Physick and Norris, and the consideration accorded to their opinions and statements.

In presenting to the profession his translation of the work of Malgaigne, Dr. Packard says:—

> "I have made it my great aim to render the text of the author as faithfully as possible, endeavoring at the same time to avoid offending the taste of the reader by the use of Gallic idioms. The notes which I have taken the liberty to insert are intended to set forth peculiarities in American views and practice, or accounts of cases in point; in one or two instances I have been able to look up quotations which were beyond my author's reach. An index has also been added, and a list, as full as circumstances would allow, of works hitherto published on the same subject."

We look upon Dr. Packard's translation of the French text as a very excellent one; we have examined it with care, and find that the original text has always been correctly and faithfully rendered. The faults we could detect were very trifling; the French *grand* is sometimes translated as *grand,* when *great* would be more proper, as at page 617, where we read that "all apparatus of this kind have two grand defects." We doubt, also, whether it is correct to use *reserved* as the French use réservé. We may say that "it is proper to be reserved in the prognosis," but we question whether it can be said correctly that "the prognosis should therefore be to a certain point reserved," (p. 627.)

The notes which have been inserted for the purpose of setting forth peculiarities in American views and practice are valuable, and fulfill completely the object for which they were introduced. The accounts of cases that have been inserted are interesting and instructive; and the cases themselves are always to the point, at the time in question. These cases have generally fallen under Dr. Packard's own observation, in the Pennsylvania Hospital.

In a few instances Dr. Packard has introduced notes, with an object not mentioned in the preface, namely, the statement of an opinion of his own, as somewhat different from that recorded by M. Malgaigne. At page 210, the note introduced reads as follows:—

> "The operation of bending the callus of a broken bone is one by no means free from pain, or even danger; and the longer the adjacent joints are kept at rest, the greater the pain and difficulty of making passive motion in them. Moreover, not only is the approach of gangrene oftentimes extremely insidious, but the re-

pair of a fracture is materially favored by a sound and transpirable condition of the skin overlying it. From these considerations it may be seen that the advantages attending the frequent examination and re-dressing of broken limbs are very great; so great as in the opinion of most surgeons to counterbalance the risk of disturbing the position of the fragments, which, after all, may be obviated by using due caution. *Constant and careful watching of the fracture from the outset*, has saved many a patient from permanent crippling."

This note was called for, and we think that the opinion of Dr. Packard in regard to frequent dressings in cases of fracture will be readily accepted as the correct one. It is, however, the only one of the notes in question, of which we are able to say this; the others appear to us to be unnecessary and the opinions they express of doubtful accuracy. They are as follows:—

Speaking of the effect of pressure, in fractures of the lower extremity, the patient being confined to bed, M. Malgaigne says:—

"In very fleshy subjects, the danger is augmented by their weight, but it is also more easily counteracted; for we need only have the board between the mattrasses, as proposed by J. L. Petit, lengthened so as to reach a little beyond the buttock, and widened so as to equal the bed, in order to give an equable support to the pelvis and limbs. If, on the contrary, the patient is spare, giving reason to fear the effect of pressure upon the sacrum by the board, we must be satisfied with supporting the sound side by means of cushions, after Duverney's method, but with the indispensable precaution of daily watching and arranging them," (p. 156.)

Dr. Packard then introduces a note to say:—

"It may be doubted whether the mere weight of the patient does not tell equally upon the skin where there is a thick layer of fat *above* it, and where there is but little; and perhaps the advantage of that layer, however great, may be counterbalanced by the additional weight which its pressure involves."

After what Malgaigne had said, this note was not needed, and few persons will doubt with Dr. Packard as to the effect of compressing the skin between a bone and a board, and a board and a mass of fat. All his own doubts would be at once dissipated by simply changing the resting spot of his body from his buttocks to his shins. The skin covering the latter, be it remembered, is endowed with no more acute sensibility than that over the former.

At page 666, the text says:—"M. Rognetta says that he twice saw simple fractures of the astragalus, without any displacement or any injury of the soft parts; at the instant of the accident, or even after the swelling had subsided, he detected the lesion by the sensation imparted to the touch, *like that of several nuts in a bag.*"

The notes add:—"It may be doubtful whether the multiple character of these fractures was proved by the sensation alluded to, since it is well known how completely the most delicate touch may be deceived; and especially where effusion into the articular cavity would increase the error." It is stated expressly that the sensation was felt at the instant of the accident, or even after the swelling had subsided, or at a time when effusion into the articular cavity was not increasing the chances of error dependent upon mistakes to be made by the touch, so well known that any reference to them in this general way was unnecessary.

At page 351, M. Malgaigne relates a curious case from Sabatier, where "the last two true ribs had been fractured by the passage of a carriage-wheel; but the lower one was broken in two places, and in such a way that the middle fragment, being quite movable, was drawn into the chest in inspiration, and pushed outward in expiration." "Probably," says the note, "the author meant just the reverse of this; the fragment would be *pushed outward in inspiration, drawn in, in expiration.*" A difference of opinion can only exist here from contrary views as to the manner in which respiration is performed. M. Malgaigne reasons as if the air entered the chest to fill the vacuum made by the movement of the walls in inspiration, and we shall prefer his view of the matter.

At page 37 the text reads thus:—"A young plasterer, driving his cart along a very muddy road, had put his foot in a deep rut; at the same moment he tried to whip up his horses; the blow missed; he was dragged forward, nearly fell, and had his leg broken by the edge of the rut." The note says:—"Might not two forces be said to have acted in this instance on the ends and middle of the bone? The weight of the body would act above; the bottom of the rut would fix the foot, and the edge of the rut bear against the middle of the leg; the latter would be in fact the agent producing the fracture."

The case was cited by M. Malgaigne in order to exemplify the effects of flexion, applied to the continuity of a curved bone, just as when an attempt is made to bend a stick over the knee. In the flexion in question, he adds, "the bone is held fast particularly by one certain point of its continuity, and the force is exercised upon one of its extremities or upon both at once." Any note for the purpose of explaining the manner in which the fracture occurred, was, under the circumstances, unnecessary.

At page 81 of the French edition, M. Malgaigne, after speaking of the *complications of fracture*, ends the paragraph thus:—"Et enfin les chirurgiens Anglais ont fini par restraindre la denomination de *fractures compliqueés* à celles seulement qui, par une plaie des téguments, sont exposeés au contact de l'air." In English we should make this to say that "the English surgeons call only those fractures *compound* that communicate by a wound with the external air." At page 79 of the translation, Dr. Packard, supposing that here *compliqueês* should be translated not as *compound*, but as *complicated*, adds a note expressive of surprise that M. Malgaigne could fall into an error, into which, we think, he has not fallen, in regard to the meaning attached by English writers to the words *compound* and *complicated*.

We have now noticed all the faults we could find in this American edition of Malgaigne, and we have searched diligently for them. They are certainly not very grievous, and it may be thought that in mentioning what we have we manifest a fault-finding spirit. We have always found M. Malgaigne's opinions so correct, and his mode of expressing them so clear, that we confess to feeling annoyed at attempts to differ from him, or to render his meaning more evident.

It remains for us to say that the bibliography added by Dr. Packard, and which M. Malgaigne had omitted, notwithstanding the statement made in his preface, is quite extensive. The plates "which, for facility of reference, have been collected at the end of the volume, instead of being interspersed throughout the text," we have compared with those in M. Malgaigne's truly admirable folio atlas. They are reduced in size one-half, and are wood engravings, while the original are lithographs, and of exquisite execution. Still they must be considered as good illustrations, and they certainly are accurate copies of the original plates.

The handsome manner in which the work has been published deserves special acknowledgment.

ART. V.—*Diseases of the Urinary Organs. A Compendium of their Diagnosis, Pathology, and Treatment.* By WILLIAM WALLACE MORLAND, M.D., Fellow of the Massachusetts Medical Society, Member of the Boston Society for Medical Improvement, One of the Attending Surgeons at the Central Office of the Boston Dispensary, Corresponding Member of the Glasgow Medico-Chirurgical Society. With illustrations. Philadelphia: Blanchard & Lee, 1858. Octavo, pp. 579.

THIS publication, as we are told in the preface, is mainly composed of the substance of two essays, to which prizes were awarded by the Boylston Medical Committee, in the years 1855 and 1857. It is composed of two parts, the first of which, devoted to diagnosis, contains 128 pages, the second, devoted to pathology and treatment, contains 380 pages, and an appendix of 50 pages is attached, in which are collected thirty-eight alphabetically arranged paragraphs that were not incorporated in the text. The arrangement of this volume is altogether such as to render it a very difficult task to say what it contains and what it does not. The subjects are not completed in the same article, and the reader must search here and there to see how fully or how meagerly they have been treated of.

In the beginning of Part I., in the first chapter, the urinary organs are thus enumerated:—

> "The urinary organs are the kidneys, which are true glands; the ureters, which are the first conduits for the transmission of the urine, as secreted; the bladder, which is its receptacle for a certain time; and the urethra, the second conduit for the urine when ready for excretion.
>
> "The supra-renal capsules, although not classed with the above, will be considered in connection with them, being related by contiguity, and occasionally involved in the same diseases."

Most persons, at the present day, will not be disposed to regard the kidneys as true glands, if by the term *true glands*, as we must suppose, it is intended to convey the idea that they are veritable secretory organs, organs elaborating from the circulating fluid what did not previously exist therein. Evidently they cannot now be looked upon as other than excretory, as destined to eliminate from the blood effete matters; they secrete nothing. Any one holding other views of their functions must be exposed to make most egregious errors in treating of the pathology of the urinary organs. It is gratifying, therefore, to notice in some prefatory remarks upon the functions of the kidneys, in the third chapter, that they are declared to be "depurators of the blood, and to remove therefrom the unassimilated, superfluous, and effete albuminous principles." In justice to Mr. Morland it must be noticed, therefore, that by the term *true glands*, he does not wish to convey the idea usually attached to these words.

The prostate, as will be remarked by every one, is omitted in the list of organs treated of in this volume. It is never mentioned throughout, except to state that its enlargement may originate that condition of the bladder termed sacculated; that in extracting the calculus in the operation of lithotomy, it is sometimes lacerated; and in a few lines a case is related showing that when enlarged it may give rise to some symptoms deceptively resembling those of stricture of the urethra. Now, though far from partaking of Home's views as to the importance of this organ, yet we cannot hesitate to declare that a work upon the urinary organs, in which it is so entirely neglected, is exceedingly defective. What renders this neglect in regard to the prostate more extraordinary, is the attention paid to the supra-renal capsules. In the preface the author expressly states that he "strictly confines himself to those diseases arising in, or especially manifested by the organs in which the urine is elaborated, temporarily retained, and the passages through which it flows." Now with either the elaboration, the reception, or the conduction of the urine, the supra-renal capsules have nothing to do; in disorders of these functions they are never thought of; while, on the contrary, the prostate is encountered, and comes into consideration, in a very great number of the cases. It is really a fault of commission to have treated of the supra-renal capsules, as it is one of omission not to have treated of the prostate.

The remainder of this first chapter contains nothing remarkable, nor does the second, which treats of affections of the supra-renal capsules; this, however, is to be expected, for it was written, as we are informed in a note, before attention had been drawn to them by the investigations of Dr. Addison.

Chapter III. is upon diseases of the kidney. The enumeration of their diseases as adopted by Dr. George Johnson, in his well-known work on this subject, is followed with, as it is said, certain modifications of the arrangement. In his chapter upon suppurative nephritis, Dr. Johnson gives the history of those forms of renal disease which are attended with the secretion of pus, and in doing this, for the sake of convenience, divides the subject in the following manner:—

I.—Suppurative nephritis from morbid conditions of the blood.
II.—Nepritis from external violence.
III.—Nephritis from retention of urine.
IV.—Nephritis from calculi in the kidney.

Pyelitis is considered, by Dr. Johnson, under the head of retention of urine, as one of the most frequent consequences of the consequent dilatation of the kidney in inflammation of the mucous membrane of the pelvis, or pyelitis, as Rayer terms it. The certain modifications made by Dr. Morland consist simply in separating more distinctly these several subjects, without changing their order.

The text is illustrated by figures, which are all the same as those in Dr. Johnson's work, with two exceptions, the fifth and sixth, illustrating hemorrhage in the Malpighian capsules compressing the tufts, and a tube containing some yellow granules, the remains of extravasated blood. With the numerous facts and observations that have been made known since the time of the publication of Dr. Johnson's work, (1852,) Dr. Morland shows himself to be familiar, and he is always careful to state his authority. In doing this, however, he generally gives but the name of the person, without adding the treatise, and the exact page where the citation is to be found recorded; this is an omission of some importance, and one which his readers must necessarily regret.

Chapter IV. is upon diseases of the ureters, not by any means a fruitful subject, at least in an exclusively diagnostic point of view. As it is said: "The diagnosis is not usually difficult, particularly if there have been even slight symptoms of obstruction," (p. 81.) When, however, there are no such symptoms, it is exceeding difficult. In a case that came under our own notice, where there had not been at any period any lumbar pains, either spontaneous or excited by pressure, nor any mucous or purulent deposits in the urine, the usual symptoms of this affection, the patient was treated as laboring under an abscess of the spleen by one of the most distinguished surgeons in the world, if not the most distinguished, and the autopsy revealed that she had been laboring under obstructed ureter, and its local consequences.

The remaining two chapters of this first part, the fifth and the sixth, treat respectively of the diseases of the bladder and of the urethra. Here, as in the other chapters of this part, the task of the author is an embarrassing one. We scarcely know whether he may be said to have done it well or not. It is certainly a very awkward arrangement, both for the reader and for the author himself, this adopted by Dr. Morland, of collecting all the diagnostic symptoms of all the different diseases in a separate portion of his work. The text of these chapters is illustrated by figures, all of which are the same as those in Dr. Gross's work on the same subject, with the exception of the thirteenth, representing a calculus formed upon a hair-pin.

The first part ends with the following paragraphs:—

> "We have thus passed in review the diagnostic elements peculiar to each affection of the urinary organs. When it is remembered that many large volumes have been written upon these diseases, and several even upon the separate one, it will be evident that he who essays to gather within a few pages the choice treasures so widely diffused, must roam far and tarry long—and yet be only a gleaner in the rich field. Our course has been to linger amid the weightiest sheaves. They are the freshest, and of undoubted quality.
>
> "While preparing a digest of what is known relatively to the diagnosis of these important maladies, we have met with several practical illustrations of the truths we have endeavored to present. Scarcely any department of our art has had so many zealous and distinguished cultivators. Discovery after discovery has gleamed along their path, and the minute investigation of pathological changes has only been rivaled by the judiciousness of treatment, and the wonderful ingenuity displayed in the fabrication and use of instruments. No less industry has been manifested in the faithful study of the normal anatomy of the organs. The sagacity of the ancients was great, and has the respect of the present age for much accurate information, even diagnostically, which it accumulated under great disadvantages; the perseverance of the moderns, if it still continue like that of Bright, Christison, Bird, Prout, Johnson, Rayer, Civiale, and a host of others, will yet more nearly complete the lofty structure they have so far advanced—when there will be less occasion than now to say '*Multum adhuc restat operis, multumque restabit.*'"

The second part of the book, or that devoted to pathology and treatment, is divided likewise into six chapters, having the same headings as those in the first. This part, as the other, evidences quite extensive reading on the part of Dr. Morland; to use his own comparison, contained in the paragraph extracted, he has been an industrious gleaner. Gleaners, however, he might be told, are not to allow themselves to linger among the weightiest sheaves, though freshest and of undoubted quality; these belong to the masters of the field. We must not be misunderstood in what we say, for it would be very unjust on our part to convey the idea that Dr. Morland has appropriated improperly the labors of others; it is to his mode of expressing himself that we object. The first chapter opens as follows:—

> "The term pathology has a wide significance. It properly comprises whatever enlightens us upon the nature and phenomena of disease; its materials are to be gathered during life and after death; by familiarity with the constitutional peculiarities of patients when in ordinary health, as well as when ill; their history, hereditary and personal; their habits; mental and bodily employment; their aspect and associations, are all pathological elements. To these the physician adds his deductions from healthy and morbid anatomy; physiological reasoning; comparisons between perfectly performed and deranged function; microscopical investigation, and the hints afforded by the action of remedies."

The last chapter thus ends:—

> "To present a condensed view of the most important practical points suggested by the subject, has been the aim of the writer. The accumulation of new facts, new aspects of disorder, and remedial measures, tempts one to continual additions to such a *résumé* as has been given.
>
> "There is scarcely a fresh treatise upon these topics but offers many interesting and essential views and hints; while medical periodicals, with almost every issue, inundate our fields of observation with novel cases, extended necroscopic examinations, plans of treatment, modified or original, and ingenious theories—which latter, if they subserve no other purpose, accustom the thoughtful mind to scrutinize closely and discriminate accurately.
>
> "In the midst of so much floating material, there come to us treasures of information worth every effort to secure. The practitioner, as he surveys this constant stream, derived from such various sources, and seeks to appropriate whatever is truly valuable, has firm ground upon which to stand, in the imperishable productions of those brilliant and laborious investigators who have so satisfactorily explored the wide domain of these complex affections *consilio et manu*."

In the appendix the various paragraphs, composed chiefly of extracts from the most recent journals, are arranged in the order given to the letters in the alphabet, and probably the same reason for this order exists in the one case as in the other.

We think that what we have said of this production, and the extracts we have made from it, are sufficient to enable our readers to judge of its character. The extracts we have made will enable them to judge also of the style of the author, which to our taste is not elegant, and, what is of more importance in a scientific work, it is far from being clear. We have been tempted to make another extract from page 342, to show what the author can do, in an endeavor to be witty, but we prefer to be generous.

We agree with Mr. Pott, "that he who thinks he can produce any benefit to society, needs not to be anxious about an apology for the publication of his ideas;" but this is hardly true of those who simply collect the ideas of others, and publish them all together, badly arranged, in a large mass.

ART. VI.—*The Ophthalmoscope; its Mode of Application Explained, and its Value shown in the Exploration of Internal Diseases affecting the Eye.* By JABEZ HOGG, Assistant Surgeon to the Royal Westminster Ophthalmic Hospital; Vice-President of the Medical Society of London, etc. etc. 8vo., pp. 107. London: Churchill, 1858.

THE brochure before us is a reprint, with various alterations and additions, of a paper read before the Medical Society of London, and published in the *London Lancet*, 1857, in Numbers XVI., XIX., XXI., of Vol. I., and VII. of Vol. II. Mr. Hogg has presented it to the public with the hope that it will serve to awaken the interest of the profession, and that it may serve as positive proof of the value of this instrument in diagnosis of diseases, which, before its appearance, were only known to us by subjective symptoms.

We have long been of the opinion that the ophthalmoscope, when used with judicious care and proper management, formed one of the greatest aids in the investigation of certain diseases of the internal eye, in regard to their prognosis and the treatment indicated in each particular case. In incipient or doubtful cases of cataract, amaurosis, and chronic inflammations of the deeper structures, and in foreign bodies in the vitreous humor or lens, its value is unquestioned; but it should, in our judgment, never be used in acute affections, in which the flood of light impinging on the parts would have the effect of producing a greater amount of irritation. For the proper use of this instrument, it is of course necessary that the observer should have as thorough a knowledge of the normal appearances of all the structures of the eye, as has the auscultator of the various sounds in the lungs in the healthy condition; without this we can expect to add nothing to our yet imperfect knowledge of diseased appearances. From the want of this precaution a certain amount of discredit has been brought upon the instrument by tyros and ignorant men; yet it has not, by any means, met with that amount of opposition as did the stethoscope when first introduced. The less complicated the construction of any instrument, the better it is adapted to our wants, and in none more than the ophthalmoscope should simplicity be the great object. The form preferred by the author is that of Mr. Anagnostakis, which consists of a concave mirror of ten inches focus, perforated in its centre. Directions are given for the employment of this, and the appearances of the healthy eye are pointed out.

An important point to be borne in mind by the observer is, as Mr. Hogg remarks, the influence produced on the retina by agents employed to dilate the pupil, thus rendering the diagnosis obscure or positively faulty. In regard to this he says :—

> "I have repeatedly seen a drop of a weak solution of *atropine* produce in the healthy eye a very large amount of congestion of the retinoid vessels, more than sufficient to deceive the practiced eye of the surgeon, and which might well be mistaken for a diseased condition. On this account I have discontinued its use, and find no difficulty whatever, with the generality of patients, in causing sufficient dilatation of the pupil by simply placing them for a short time in a darkened room."

The "merit of the invention" Mr. Hogg gives to his countryman, Mr. Cumming, "who furnished the first idea for the ophthalmoscope, which is even now said to be the sole invention of the Germans, who were in truth the first to appreciate its worth, and publish it to the profession." "Twelve years ago he pointed out the existence of a reflection from the back of the human eye, and distinctly recognized the significance of the discovery." We must confess that we do not see the point of all this; why an idea should be confounded with an invention of undoubted German origin.

The section on the presence of cysterici in the eye, made up of Graeffe's cases, is interesting, and that on glaucoma is quite long and well written, incorporating within its limits several interesting cases. We must agree with the author in the fact that "the wood-cuts printed in the text imperfectly represent the appearances described;" he might have added that some are positively bad. The book, although it contains but few new facts, is an interesting one, and we would recommend it to the perusal of our readers.

As journalists, it is well known that we have always pursued a perfectly independent course in regard to criticisms on works sent us for review, commending wherever it may be considered just, and exposing faults without fear of consequences, as should be the duty of every conscientious reviewer. It is on this account, and not because of any personal ill-feeling to an author, that we never hesitate to comment prominently upon whatever may seem to deserve censure. We regret that before dismissing the present work, we have to point out a plagiarism on the part of a man who holds a respectable position in England. We had hoped that we had made an honest man of Mr. Hogg, but we find that he is inveterate in his literary thefts, a fact well known in Great Britain, and, in truth, told us by one of his own countrymen. Literary larceny is evidently deeply inlaid in his constitution, and we take it for granted that it would be as difficult to eradicate the evil from his system as it would be to eradicate the cancerous diathesis in a man whose organs are surcharged with scirrhous deposits.

To prove that our assertions are perfectly correct, we subjoin paragraphs from page 18 of Mr. Hogg's work and from page 509 of the first volume of this journal; the plagiarism is from a review of "Dixon on Diseases of the Eye," written by a gentleman of this city:—

Hogg's Ophthalmoscope:—	REVIEW:—
"Although I am willing to admit that the retina is not 'a merely passive object of examination' with this instrument, and that it is 'just the one tissue of the body which appreciates the intensity of the rays which fall upon it,' still I cannot agree with this gentleman in forbidding the use of the instrument for more than a few seconds at a time. The consequences dreaded from this concentration of light on the retina, have deterred many from using the instrument altogether; and this dread has even induced others to condemn it in toto, without ever giving it a trial.	"Although we are willing to admit that the retina is not 'a merely passive object of examination' with this instrument, and that it is 'just the one tissue of the body which appreciates the intensity of the rays which fall upon it,' still we cannot agree with the author in forbidding the use of the instrument for more than a few seconds at a time. The consequences dreaded from this concentration of light on the retina, have deterred many from using the instrument altogether; and this dread has even induced some to condemn it in toto, without ever giving it a trial.
	* * * * * * *
I have employed it in cases of hyperæmia of the retina, retinitis, choroiditis, and posterior ophthalmitis, and have *never* seen any evil consequences follow its use; and in not more than half a dozen out of the whole number of cases in which I have used it have I found the patients complain of the intensity of the light, although the examinations were often continued long enough for me to sketch the diseased structures, and enable students to compare them after me."	We have employed it in cases of hyperæmia of the retina, acute retinitis, choroiditis, and posterior ophthalmitis, and we have *never* seen any evil consequence follow its use; and in not more than half a dozen out of the whole number of cases in which we have used it have we found the patients to complain of the intensity of the light, although the examinations were often continued long enough for us to sketch the diseased structures, or to enable a few professional friends to view them after us."

Is it not a little remarkable that Mr. Hogg should have appropriated the greater portion of this paragraph, without the slightest acknowledgment of any kind, from the very number of this journal in which he was so severely castigated a year and a half ago? To convince ourselves that our charge is not without foundation, we have consulted the numbers of the *Lancet* mentioned in the commencement of this notice, and do not find the paragraph in question. Mr. Hogg forgets the use of quotation marks, or apparently belongs to that happy class of individuals who flatter themselves that his countrymen never read American works, or who suppose that Americans themselves are ignorant of their own writings. We therefore abandon him to his fate as an irremediable and hopeless case.

ART. VII.—*A System of Human Anatomy, General and Special.* By ERASMUS WILSON, F.R.S., author of "The Dissector's Manual," etc. etc. A new and improved American, from an enlarged London edition. Edited by WILLIAM H. GOBRECHT, M.D., Professor of Anatomy in the Philadelphia College of Medicine, etc. 8vo., pp. 616. Blanchard & Lea: Philadelphia, 1858.

THE very favorable reception which this work has met with since its first appearance renders any commendation at our hands superfluous, it having been used in every dissecting-room in this country, as a complete and faithful guide to the anatomical student, and as a book of reference to the more advanced physician. In the present edition the amount of matter has been extended and the number of wood-cuts largely increased. The mechanical execution is good, and the American editor has done his duty in reading proof-sheets and making a few additions, the prerogative, we believe, of editors of most of our reprints.

ART. VIII.—*Lectures on the Principles and Practice of Physic;* delivered at King's College, London. By THOMAS WATSON, M.D., Fellow of the Royal College of Physicians, etc. etc. A new American, from the last revised and enlarged London edition. With additions, by D. FRANCIS CONDIE, M.D., Fellow of the College of Physicians of Philadelphia. 8vo., pp. 1224. Philadelphia: Blanchard & Lea, 1858.

THE mere announcement of the appearance of a new edition of the elaborate work of Dr. Watson is sufficient to insure it a wide circulation, without our bestowing any praise upon it as a literary production. In our student days we well remember with what pleasure we always took it up, with what delight we read its fascinating pages, and how we admired the clearness, grace, and smoothness of the author's style, and the vast amount of erudition stored up in it. It now reappears much increased in size, and we greet it as we would a long-absent friend. It has been the duty of Dr. Condie to incorporate in the text such facts as had been omitted by Dr. Watson, and to bring it up to the wants of the American student. His additions on cholera infantum, cerebro-spinal meningitis, yellow fever, bilious remittent fever, and on other topics, are interesting, and enhance the value of the work. From its bulky size, we could wish that it had preserved its English form of two volumes, as in this shape it would be much more easy to handle, and, in addition, would have the great advantage of larger type, a great assistance, we need not say, to those who read at night.

Original Communications.

ART. I.—*Contributions to Obstetric Jurisprudence.* By HORATIO R. STORER, M.D., of Boston.

NO. I.—CRIMINAL ABORTION.

By the Common Law and by many of our State Codes, fœtal life, per se, is almost wholly ignored and its destruction unpunished; abortion in every case being considered an offence mainly against the mother, and as such, unless fatal to her, a mere misdemeanor, or wholly disregarded.

By the Moral Law, THE WILFUL KILLING OF A HUMAN BEING AT ANY STAGE OF ITS EXISTENCE IS MURDER.

In undertaking the discussion at length of this subject, three preliminary facts must be assumed:—

First.—That if abortion be ever a crime, it is, of necessity, even in isolated cases, one of no small interest to moralist, jurist, and physician; and that when general and common, this interest is extended to the whole community and fearfully enhanced.

Secondly.—That if the latter assumption be true, both in premise and conclusion, neglected as the crime has been by most ethical writers and political economists, hastily passed over by medical jurists,* and confessedly everywhere the great opprobrium of the law, often indeed by taunt that of medicine, either it cannot in the nature of things be suppressed, as by these facts implied, or its suppression has not been properly attempted. Discarding the former of these alternatives as alike unworthy of belief and proved false by facts hereafter to be shown, it will appear,

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* So far as the writer is aware, there exists, in this or any other language, no paper upon the subject at all commensurate with its importance. The chapters devoted to it in medical text-books, though some of them admirable so far as they go, especially that of Beck, are defective and often erroneous; while but little information of any value can be found elsewhere. In the French periodicals have appeared articles on special points hereafter referred to; in Great Britain able arguments regarding the commencement of fœtal life have been made by Radford, (1848;) and in this country, with remarks on the frequency of the crime, by Hodge, of Phila-

Thirdly.—That the discussion now broached is neither supererogatory nor out of place; further, that it is absolutely and necessarily demanded.

Moreover, in order that the importance and various bearings of the subject may be better appreciated, and that the writer's position and aims may be more fairly understood, it must be borne in mind that there exist to this discussion certain positive and apparent objections, which have, in a measure, given rise to much of the silence and omission alluded to above, and are, in the main, as follows:—

1. The natural dislike of any physician to enter upon a subject on some points of which it is probable that a portion of the profession is at variance with him, either from disbelief in the alleged increase of criminal abortion, unnoticed for reasons shown hereafter, or from a blind reliance on Providence of itself to abate the evil.
2. His fear, lest by any possible chance, by showing the frequency of the crime and its means, he may unhappily cause its still further increase.
3. The reluctance on the part of many of the profession to attack a powerful and acknowledged monied interest;
4. And to tell their patients, more commonly than is yet general, most unwelcome truth; thus not merely condemning, but, to their own consciences at least, criminating them;
5. And individually to risk losing practice, if thought more scrupulous than others;
6. And to be brought into more frequent contact with the law, even though for ends of justice;
7. And to exercise greater care and discretion in diagnosis and treatment, lest themselves be brought to answer for malpractice, or worse;
8. And publicly to discuss matters supposed to be generally unknown, and thus seem to throw open professional secrets to the world.

And, finally, grave doubts lest the statements made, though simple and true, should yet appear so astounding as to shock belief, or so degrading as to tend to lessen all faith in natural affection and general morality.

But these objections, so far at least as regards the profession, are un-

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delphia, (1839 and 1854,) and by the present Professor of Obstetrics in Harvard University, (1855.) To the latter, his father, and to the journalists (Drs. Morland and Minot, of Boston,) by whom the effort then made was so warmly and eloquently seconded, the writer acknowledges his indebtedness for the thought of the present undertaking.

doubtedly but of limited existence; and, on the other hand, as more than counterbalancing them all, are the following arguments:—

That medical men are the physical guardians of women and their offspring; from their position and peculiar knowledge necessitated in all obstetric matters to regulate public sentiment and to govern the tribunals of justice.

That the discussion by them of this crime may very probably be the means, in great measure, of ultimately restraining or suppressing its perpetration.

That such will undoubtedly tend to save much health to the community and many human lives.

And, that, were there no other reason, it is clearly a duty.

I shall accordingly proceed to prove, so far as possible, the truth of every premise as yet stated, and to show the real nature and frequency of the crime: its causes; its victims; its perpetrators and its innocent abettors; its means and its proofs; its excuses, the deficiencies and errors of existing laws, and the various other obstacles to conviction; and, above all, so far as the present series of papers is concerned, the duty of the profession toward its general suppression.

I. IS ABORTION EVER A CRIME?

That this could have been doubted, least of all by mothers, however ignorant or degraded, would at first sight appear improbable. The sense of the public, however, its practice, its laws, being each proved to the contrary by the stubborn evidence of facts, the necessity of our preliminary inquiry will be made manifest.

To postpone, for the present, all other considerations, we will regard abortion in the abstract. It may be defined, best perhaps, as the violent and premature expulsion of the product of conception, independently of its age, viability, and normal formation. These characteristics are eliminated as having judicially and actually nothing to do with the essential nature of abortion, whereas in infanticide they are each elements of great importance; a difference that will hereafter be seen.

We further, in the present investigation, set aside all cases where abortion is the result of accident, or from natural causes, or justified by the rules of medicine, whether to save the mother or her child. We shall have occasion, in the subsequent course of our inquiries, to discuss this latter question somewhat fully, and to set forth unpleasant truths. We now confine ourselves exclusively to those instances where the attempt at premature expulsion of the product of conception is artificially induced and intentional, and where, so far as can be judged, it is not necessitated and would not otherwise have occurred.

In the first place, the laws do not recognize that unnecessary abortion, *per se*, is a crime.

This act, when unnecessarily done, must be for one of two reasons: either to prevent the product of conception from receiving life, which subsequent evidence will show cannot be the case, or, if living, to destroy it.

We have said that the Common Law and many of our American statutes lose sight of this fundamental idea. Though based upon the first of the above alternatives,—the erroneous one, as regards the fact of their existence,—they are so worded as almost wholly to ignore fœtal life, to refuse it protection, to insure their own evasion, and by their inherent contradictions to extend the very crime they were framed to prevent.

They recognize, for the most part, no offence against the fœtus; we have just shown that such and such alone is always intended. They punish an attempt, which does not exist, upon the well-being or life of the mother; the intent being seldom or never to destroy the mother. She is herself, in almost every case, a party to the action performed; an accessory or the principal. To constitute a crime, a malicious or wicked intent is supposed to exist; we have thrown aside, as does the law, every case occurring from accident or from justifiable cause. The intent, if existing, as of course must be always the case, is against, and only against, the product of conception.

Again, the punishment meted by the law proves the truth of these propositions. Unless the woman die in consequence of the offence, it is declared, in every stage of pregnancy, a mere misdemeanor, as in Massachusetts; or else, while called such, or by omission justified or openly allowed in the early months when the fœtus is without other safeguard, the law pronounces abortion a felony and increases its penalties in more advanced pregnancy, after quickening has rendered it infinitely more certain that the fœtus will remain undisturbed, and has thus in the great majority of cases prevented the crime.

On the other hand, granting for the moment that the erroneous assumptions of the law were correct, and that the attempt were upon the life of the mother, how inconsistent to punish murder, attempted or committed, if by injury to the throat or heart, capitally, and if by injury to the womb, by temporary imprisonment; especially where this latter case always necessitates the slaughter of a second human victim.

Or, granting that the attempt were only upon the mother's health or temporary welfare, how absurd to punish the offence in early pregnancy, where her risks are greatest, by a trifling penalty or not at all, and in more advanced pregnancy, where these risks are daily lessened, with increased severity.

And, finally, if the fœtus were, as has been sometimes supposed, merely *pars viscerum matris*, its removal would be like that of a limb, or of any other portion of the body, whose loss is not absolutely attended with that of life; if made with the mother's consent, it would be unpunishable by law; if against her will, it would be already amenable, like other maim or mutilation, to existing statutes. In the one case, laws against abortion were needless; in the other, unjustifiable.

In a word, then, in the sight of the common law, and, in most cases of the statutory law, also, the crime of abortion, properly considered, does not exist; the law discussing and punishing a wholly supposititious offence, which not only does not exist, but the very idea of whose existence is simply absurd.

We turn now to public opinion. It, too, both in theory and in practice, fails to recognize the crime. Its practical denial of the true character of the offence will be shown in the course of our remarks on its frequency. Its theoretical denial we here consider, as proved in three ways—by implication, by collateral testimony, and by direct.

First, the maxims of the law are based on past or present public opinion. If merely on past, and this has totally changed, the law in matters of such importance is compelled to change also. The fact that the laws on this subject remain unaltered, if it be granted, as will be proved, that they are erroneous, furnishes us at the outset, and so far, with evidence that public opinion was formerly wrong, and that it so continues.

The frequency of the offence, and the character and standing of the mothers upon whose persons it is practised, accessories as we have seen, or principals, to it, furnish similar and more cogent testimony regarding the theory upon which it is founded. We shall soon perceive how extensive and high reaching is the frequency; we must therefore conclude that the public do not know, or knowing deny, the criminal character of the action performed.

Again, the direct testimony of the parties themselves is often available. It is undoubtedly a common experience, as has certainly been that of the writer, for a physician to be assured by his patients, often no doubt falsely, but frequently with sincerity, that their abortions have been induced in utter ignorance of the commission of wrong; in belief that the contents of the womb, so long as manifesting no perceptible sign of life, were but lifeless and inert matter; in other words, that being, previously to quickening, a mere ovarian excretion, they might be thrown off and expelled from the system as coolly and as guiltlessly as those from the bladder and rectum.

It having now been shown, directly and by temporary assumption, that the law and public sentiment, both by its theory and its practice, alike deny to unjustifiable abortion the imputation of crime, it remains for us to discuss this question abstractly, and to prove not merely that they are wrong, but that the offence is one of the deepest guilt, a crime SECOND TO NONE.

Ignorance of the law is held no excuse. The plea of ignorance of guilt could hardly better avail where its existence is implied by common sense, by analogy, and by all natural instinct, binding even on brutes. Were this guilt, however, clearly shown, and its knowledge, supposed wanting, to be spread broadcast by the press, the all-powerful arbiter of public opinion, the last and strongest prop of the crime were gone.

It has been shown, by setting aside all accidental cases, those naturally occurring and those necessarily, and in the absence of reasonable evidence to the contrary, that all other abortions must be intentional, that they must be occasioned by the "malice aforethought" of the law. It has also been shown that in these cases, except it exist as an additional element, the malicious intention is not against the life or person of the mother, but that in every instance it is against the product of her womb. Hence, the whole question of the criminality of the offence turns on this one fact, the real nature of the fœtus in utero. If the fœtus be a lifeless excretion, however soon it might have received life, the offence is comparatively as *nothing;* if the fœtus be already, and from the very outset, a human being, alive, however early its stage of development, and existing independently of its mother, though drawing its sustenance from her, the offence becomes, in every stage of pregnancy, MURDER.

"Every act of procuring abortion," rules Judge King, of Philadelphia,* contrary to the usual interpretation of the law, "is murder, whether the person perpetrating such act intended to kill the woman, or merely feloniously to destroy the fruit of her womb."

Common sense, we have said, would lead us to the conclusion that the fœtus is from the very outset a living and distinct being. It is alike absurd to suppose identity of bodies and independence of life, or independence of bodies and identity of life; the mother and the child within her, in abstract existence, must be entirely identical from conception to birth, or entirely distinct. Allowing, then, as must be done, that the ovum does not originate in the uterus; that for a time, however slight, during its passage through the Fallopian tube, its connection with the mother is wholly broken; that its subsequent history is one merely of development, its attachment merely for nutrition and shelter, it is not rational to suppose that its total independence, thus once established, becomes again merged into total identity, however temporary; or that life, depending not on nine months' growth, nor on birth, because confessedly existing long before the latter period,—since quickening at least, a time varying within wide limits,—dates from any other epoch than conception; while it is as irrational to think that the influence of the father, mental and moral as well as physical, so often and so plainly manifested, can be exercised by any possibility upon the child at any other moment than that original and only one of impregnation itself.

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* As quoted by Hodge. Introductory Lecture, p. 15.

Another argument is furnished us, similar, but differing. The fœtus, previous to quickening, as after it, must exist in one of two states, either death or life. The former cannot take place, nor can it ever exist, except as a finality. If its signs do not at once manifest themselves, as is generally the case, and the fœtus be retained in utero, it must either become mummified or disintegrated; it can never again become vivified. If, therefore, death has not taken place, and we can conceive no other state of the fœtus save one, that, namely life, must exist from the beginning.

These reasonings are strengthened by the evidence of analogy. The utter loss of direct influence by the female bird upon its offspring from the time the egg has left her, and the marked effect, originally, of the male; the independence in body, in movement, and in life, of young marsupial mammals, almost from the very moment of their conception, identical analogically with the intra-uterine state of other embryos,—nourishment by teat merely replacing that by placenta at an earlier period; the same in birds, shown by movements in their egg on cold immersion before the end of incubation; the permanence of low vitality, or of impaired or distorted nervous force, arising from early arrest or error of development, and necessarily contemporaneous with it, are all instances in point.

Brute instincts are often thought wholly supplanted by human reason. That this is not so is proved by what obtains in the absence of reason, whether from the outset or subsequently occurring. Idiots and lunatics alike show the actual identity in this respect of man and the brute, however instinct, in the former, may normally be tempered by conscience and reason. Whatever ideas on the subject of abortion the human mind may have forced itself to entertain, let the slightest proof concerning the existence of fœtal life be alleged, and maternal instinct at once makes itself known: the parent, as after its birth, would often even perish to preserve her child. This is not conscience, which is stirred only by an afterthought, but instinct.

Thus far, incidental proof concerning the commencement of fœtal life, and so the guilt of unjustifiable abortion. More decisive evidence is at hand.

That the movements of the fœtus, subsequent to quickening, whatever the actual nature of that first sensation may be, declare the existence of intra-uterine life, is allowed by the world; by none more than by mothers themselves, whose statistics prove that after the perception of these movements criminal abortions are comparatively rare.

But quickening,—a period usually occurring from the one hundred and fifteenth to the one hundred and thirtieth day after conception, but varying within still more appreciable limits in different women, and in the same women in different pregnancies, from variations in the amount of liquor amnii, the early strength of the fœtus, and other causes, and also, if at all, owing in its first sensation to rising of the womb from the pelvis, probably occurring a little earlier with boys than with girls, from their relative difference in size,*—is often absent, even throughout pregnancy; and fœtal movements are sometimes appreciable to the attendant when not to the mother, or indeed to the mother alone.

Further, in premature births, where quickening has not occurred, or before its usual period, by the movements of the fœtus, its earlier independent and vital existence is sometimes reduced to a matter of ocular demonstration; while to the ear, in very many instances, as early and as conclusive evidence is afforded by the sounds these movements give rise to.†

Quickening is therefore as unlikely a period for the commencement of fœtal life as those others set by Hippocrates and his successors, varying from the third day after conception, to that of the Stoics, namely birth, and as false as them all.

We need not, with Dubois‡ and some earlier writers,§ from the manifest relation of means to the end, consider that the movements of the fœtus in utero, and its consequent attitude and position, are signs of an already developed and decided sentience and will, nor is it requisite to suppose them the effect of an almost rational instinct. But that they are wholly independent of the will and the consciousness of the mother, and yet by no means characteristic of organic life, whether hers or its own,—which latter is also by abundant evidence proved independently to exist,—but decidedly animal in their character; that they are not explainable by gravity, despite all the arguments alleged, latest by Matthews Duncan,* nor on any other supposition save that of a special and independent excito-motory system, distinct from that of the mother,† brings us directly down to this—the existence of as distinct and independent a nervous centre, self-existing, self-acting, living.

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* Hippocrates states that this is a fact, and that he had found the difference of a whole month, which he attributes to the "greater strength" of the male.—(*On the Nature of the Child*, Sect. 11.) I am unaware that this point has been investigated by any modern writer

† "These sounds may sometimes be distinguished *several weeks* before the mother becomes conscious of the motions of the child."—NAEGELE; *Treatise on Obstetric Auscultation*, p. 50.

‡ Memoire sur la cause des Présentations de la Tête, &c.—*Mém. de l'Acad. Roy. de Méd.* tome ii.

§ A. PARÉ; English Trans., p. 899. HUGH CHAMBERLEN'S Trans. of Mauriceau on *Diseases of Women with Child*, p. 147, Note. ENNEMOSER; Historisch-physiologische Untersuchungen über den Ursprung und das Wesen der menschlichen Seele; Bonn, 1824. CABANIS; Rapports du Physique et du moral de l'Homme, tome ii. p. 431.

We set aside all the speculations of metaphysicians regarding moral accountability of the fœtus, the "potential man," and its "inanimate vitalities," as useless as they are bewildering. If there be life, then also the existence, however undeveloped, of an intellectual, moral, and spiritual nature, the inalienable attribute of humanity, is implied.

If we have proved the existence of fœtal life before quickening has taken place or can take place, and by all analogy and a close and conclusive process of induction, its commencement at the very beginning, at conception itself, we are compelled to believe unjustifiable abortion always a crime.

And now words fail. Of the mother, by consent or by her own hand, imbrued with her infant's blood; of the equally guilty father, who counsels or allows the crime; of the wretches who by their wholesale murders far out-Herod Burke and Hare; of the public sentiment which palliates, pardons, and would even praise this so common violation of all law, human and divine, of all instinct, of all reason, all pity, all mercy, all love, we leave those to speak who can.

We have next to prove the frequency of abortion.

[TO BE CONTINUED.]

The writer, having been directed by the American Medical Association, at its meeting at Nashville in 1857, to prepare a Report on Criminal Abortion, with a view to its general suppression, from which duty he has hitherto been prevented by ill-health, desires the general cöoperation of the profession. He has already received pertinent and valuable information from many parts of the Union, and would gladly hear from all who may be interested in the subject. For this purpose he subjoins the following inquiries:—

1. Is Criminal Abortion, whether induced by the patient herself or not, on the increase in your neighborhood?
2. Is it confined to unmarried women?
3. If it is increasing, is further silence and inaction the duty of the profession?
4. Is a general exposure of its true character, owing as it often is to ignorance, and a decided and general denouncement of its guilt, likely to increase still further the crime?
5. Is it necessary and advisable, where the laws on this subject are notoriously and fundamentally defective, for the profession to recommend their revisal and subsequent enforcement?

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* Ed. *Med. and Surg. Journ.*, Jan. 1855, p. 50.

† SIMPSON; *Obstetric Works*, vol. ii. p. 88.

ART. II.—*A Case of Aneurism of the Right Femoral Artery Cured by Digital Compression; with Remarks and a Statistical Report of twenty-two other cases treated by this method.* By SAMUEL W. GROSS, M.D., Chief of the Surgical Clinic of the Jefferson Medical College, Philadelphia.

ON the 1st of June, 1858, Sarah, a negress, thirty-two years of age, a native of Delaware, consulted Professor Gross on account of a pulsating tumor, seated at the upper and inner portion of the right thigh. She had always enjoyed good health. Her first symptoms appeared about ten months previously, when she experienced sharp shooting pains radiating through the hip, down the thigh to the knee, and extending as far as the ankle. These pains, which were not of long duration, were intermittent, occurring sometimes only once every two weeks, at other times every two or three days, being dependent, in some degree, upon the amount of exercise she took. She had been in the habit of rubbing her limb with vinegar and Cayenne pepper for these rheumatic pains, as she supposed them to be, when, in the latter part of March, she felt a small, hard lump at the spot adverted to, about the size of a walnut without its hull. This rapidly increased, and, about five and a half weeks ago, the pains in the tumor became so severe as to interfere with walking. On this account, and, inasmuch as the pain was relieved by the recumbent posture, she took to her bed.

Upon examination, a globular tumor was found at the upper and inner portion of the thigh, in Scarpa's triangle, about one inch and a half below Poupart's ligament. Its length was 4½ inches and its width 5¾ inches. The circumference of the thigh was 26¼ inches; while the sound one measured only 23 inches. The tumor presented very distinct locomotion and a thrill at its superior portion. The *bruit de souffle* was well marked, and the pulsation was strong over the whole tumor, being distinctly felt by the patient, and 84 a minute. The sac could readily be emptied. Pressure on the artery above diminished the volume of the tumor and caused the sounds and impulse to cease. The arterial system was in other respects in a perfectly healthy condition, the heart's sounds being normal and the pulse perfectly regular.

The question in this case arose what plan of treatment should be employed. Although the woman was in good health, the operation of casting a ligature around the external iliac appeared too formidable, when compared with the safer mode afforded by compression. An instrument with a single pad, resembling Carte's circular compressor, was ordered to be made, the patient in the mean while being placed upon the use of purgatives, with low diet, and rest in the recumbent posture. The instrument, when finished, was found to be too small for the patient's thigh, and was therefore cast aside without the pad having been made to bear upon the artery at all. Not wishing to delay the treatment any longer, Prof. Gross placed the patient under my charge, compression by means of the fingers having been determined upon. Having obtained a suitable number of intelligent assistants, on Thursday morning, the 10th of June, at ten minutes after ten o'clock, a grain of sulphate of morphia having been administered, I began the treatment by applying the thumb over the artery as it passes over the pubic bone. At the end of an hour the temperature of the limb was somewhat diminished. At one o'clock the patient complained of sickness at the stomach, which was relieved by half a grain of morphia, and in an hour and a half she fell asleep. During the afternoon she felt drowsy and did not complain of pain.

11 P.M.—She has been complaining of pain for the last hour at the point of pressure, whenever the assistants relieved each other; in other words, when the pressure was relaxed. The knee is the seat of tingling pain, which extends to the toes, and the whole limb is painful when touched.

Friday, 10 A.M.—The tumor feels very solid and cannot be emptied of its contents. There is no bruit; but slight pulsation and thrill. The point of pressure has begun to be painful, and, to prevent any irritation of the skin, moistened flour was spread over it.

5½ P.M.—The tumor is very hard, but not diminished in size. No thrill or bruit, and but very feeble pulsation. The compressed spot is quite painful. Treatment discontinued after 31¼ hours' employment. A grain of morphia was administered, and pounded ice in a bladder was applied, to be continued during the night.

Saturday, 10 A.M.—The patient slept well last night. The tumor is softer, but cannot be emptied. The pulsations are stronger, and there is some thrill. The compression was renewed at twenty minutes to eleven o'clock, and in an hour she complained of great pain in the knee, which soon extended to the toes. At half-past twelve the patient took one grain of morphia; the pain soon ceased, but occasionally returned. At half-past five half a grain of morphia was administered.

At 8 P.M. the point of pressure gave so much pain that a thin opium plaster was interposed between the skin and finger to avoid more irritation. This had a good effect in palliating the suffering.

10 P.M.—The patient complains of much pain throughout the whole extent of the tumor. The thrill has disappeared, and the pulsations are becoming feeble. The femoral artery is beating forcibly, and a collateral branch, about the size of the ulnar artery, can be felt beating at the inner and posterior portion of the tumor.

At 11 P.M. half a grain of morphia was administered; faintest perceptible pulsations.

At 12¼ all pulsation had ceased. The femoral still pulsated pretty freely. The compression was continued for another hour, at the end of which time the femoral was beating gently.

At 2½ o'clock, being satisfied that nothing more could be done, and that the circulation in the tumor was arrested, the patient was left, half a grain of morphia having been administered.

For a few days after this event the patient had slight tingling pains in the limb. Up to the time of her departure her appetite was good, and she slept well and was comfortable in every particular.

In about a week a gum ammoniac and mercurial plaster was placed over the tumor, and her diet was restricted. The tumor gradually diminished in volume, and she left for home on the 6th of July, not quite a month after the commencement of the treatment. At the time of her departure the affected limb had diminished to exactly the same size as the sound one. The femoral artery was pervious to within an inch above the tumor, and she could walk with comfort.

On the 13th of October, Sarah came to the city to report herself. The tumor had diminished to the size of a walnut and was very solid. The locomotion was perfect and her health was good in every respect.

Remarks.—This case is an admirable example of the cure of aneurism by digital compression, even when this has been interrupted. The total amount of time necessary for its cure was forty-five hours and fifty-five minutes: at the first sitting, thirty-one hours and twenty minutes; at the second, fourteen hours and thirty-five minutes.

The compression was almost total, preventing the blood from entering the tumor at all; and the whole time in which the blood did traverse the sac did not exceed two hours.

There cannot be a possibility of doubt, judging from the state of the tumor, that, had the compression at the first sitting been continued for two or three hours longer, a cure would have been the result. This was prevented, however, principally on account of the pain at the point of pressure, and also on account of the fatigue of the assistants and myself. I therefore preferred to wait, feeling confident that at the next meeting we would see the success of the treatment. My mind was also biased, when I remembered two cases reported respectively by Mr. Porter and Mr. Cusack, in both of which mechanical compression had been used, but proving irksome to the patients, was discontinued. The sacs were hard and incompressible, but pulsation still continued; the patients got out of bed and walked about, and yet deposition of fibrine continued until a cure was effected. The state of the tumor in the above case was exactly in the same condition as in those reported by the Dublin surgeons, and I expected, with the aid of the pounded ice, that a similar result would follow. In this, however, I was disappointed, and had to recommence the treatment.

The pressure was made mainly over the artery, where it crossed the horizontal ramus of the pubes; but when the pain became a source of annoyance, the finger was shifted and pressure was applied over the artery in the space between Poupart's ligament and where the saphenous joins the femoral vein. When made upon the former spot it was more easily kept up, and with less pain to the patient and to the finger of the operator. Throughout the whole course of the treatment the pain was not very great, owing to the free use of anodynes, which I consider in these cases of paramount importance to lessen arterial action, relieve suffering, and calm irritability of the system. An interesting point, in connection with other reported cases, is the establishment of the collateral circulation, as it will have been seen, from a perusal of the case, that a large arterial trunk pulsated in a very marked manner previous to the obliteration of the sac. At no time was the temperature of the limb much below that of the sound one, nor was there much œdematous swelling of the extremity, showing that the vein was not compressed. A point in favor of the compression not being altogether so forcible as entirely to prevent the blood from passing into the sac, is, that when it was total, the patient experienced more of that tingling pain than when the reverse was the case.

To Dr. Wood, and Messrs. Brinton, Glenn, McCondichie, Tomlinson, Blicke, Dysart, Purefoy, and Murfree, students of medicine in this city, much credit is due for their kind assistance and the praiseworthy zeal and interest which they manifested in the cure of this case.

Since the revival of the treatment of anuerism by compression, principally through the instrumentality of the Dublin surgeons, this mode of treatment has come into more general use, and its success is due to the better knowledge of the rationale of the mode of cure, and consequently the more effectual means employed for that purpose.

Although in the hands of a few eminent surgeons the ligature has been attended with results which, strange to say, have not been attained by others of apparently equal skill and care,—which good results have naturally led them to prefer that method to any other,—yet by most surgeons it has been discarded, until, at least, the more safe method has been put to test. There are still a few, who, instead of being guided by the more proper feeling of giving additional security and comfort to the patient, prefer the notoriety of a brilliant operation, gaining everything from the *éclat* dependent thereon, and occasionally not allowing the result of their treatment to be brought to light. The advantages of compression are so very obvious, that it is wonderful that it does not supersede all other methods of treatment. It is true there are cases in which the aneurism is so seated that this procedure would be out of the question, and the aneurism may be in such a condition as imperatively to call for the use of the ligature; but in all external aneurisms where pressure can be brought to bear upon the artery, it should unquestionably be employed. Conservatism in surgery is a term unknown in the vocabulary of some men, but those who do know it, and freely employ it, lead certainly a more quiet and conscientious, if not a more brilliant life. The advantages of compression over the ligature may be stated in a few words. It is a more simple, safe, and certain procedure, and, if persevered in, will almost always be successful. It is not followed by secondary hemorrhage. There is but little danger of erysipelas, suppuration of the sac, phlebitis, and gangrene. Constitutional effects are not so apt to succeed it. There is no danger of neuritis and purulent collections in the common sheath of the vessels. The length of time required for the cure, and the suffering are not so great. The mode of cure more closely resembles that effected by nature, and is apt to be more permanent, especially if the ligature be not applied at a distance from the sac; in cases where the ligature is near the sac, a loose coagulum may form and secondary aneurism may ensue. Lastly, and not the least reason of all, is that the surgeon does not feel that anxiety for his patient, as is always the case after a capital operation.

It is not necessary to adduce facts in substantiation of the above statements, for the records of all cases abundantly prove their validity.

As instrumental compression has such advantages over the ligature, so pressure exerted by the fingers possesses some advantages over that made by apparatus. Thus, it is quicker and less painful; it can be regulated better, and in some situations can be made to act upon the artery alone; it is applicable when apparatus is not; and in cases in which mechanical contrivances cannot be borne, it can be used to excite a tolerance of the skin previous to their employment.

The following are condensed reports of all the cases which have been treated by digital compression, employed either alone or in conjunction with apparatus. They are given in regular succession, in the order of the years in which they occurred:—*

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* In an interesting communication made to the *Société de Chirurgie*, by Mons. Ar. Verneuil, and published in the *Gazette Hebdomadaire*, 30th October, 1857, p. 773, will be found the statistics of seventeen cases of aneurism, all popliteal but four, treated by digital compression. To this paper, which may also be found in the *Dublin Quar. Journ. of Med. Sci.*, May, 1858, p. 486, in the *Amer. Journ. of Med. Sci.*, July, 1858, p. 234, in the *New Orleans Med. and Surg. Journal*, Nov., 1858, p. 840, as well as to the work of M. Broca, I am indebted for many of the facts here presented. For further details of these cases, these two sources may be consulted.

Case 1.—In 1844, MR. E. GREATREZ was the first to employ digital compression, in a patient with popliteal aneurism of the right side. The compression was total and double; being made by an Italian tourniquet, alternating with the fingers of the patient. The compressor was placed over the artery below Poupart's ligament, and when the pain produced by it became unbearable, the patient relaxed the pressure for a few moments, at the same time applying his fingers very firmly to the artery just above the instrument, so as to allow of no blood passing through the tumor. The cure was effected in twenty-four hours. In this case, therefore, the fingers were but accessory to the instrument.

Case 2.—In 1846, M. VANZETTI employed digital compression alone, in a case of popliteal aneurism, by means of assistants, at the hospital of Kharkoff, in Russia. This was maintained for two days, but was inefficient. The patient was cured by the ligature.

Case 3.—In 1847, MR. TUFFNELL had, in a case of popliteal aneurism, been employing double and alternate pressure by apparatus. The upper pad giving rise to inflammation of the inguinal glands, the finger of the patient was substituted. This pressure was alternated with that of the instrument for twenty-four hours, when the inguinal pad was again used. The cure was effected in seven days.

Case 4.—In the same year, PROF. J. KNIGHT, of New Haven, had a case of popliteal aneurism, in which apparatus could not be borne at all. He cured the case in forty hours by *digital compression alone*, made by intelligent assistants, upon the femoral artery over the pubes.

Case 5.—In 1848, DR. W. H. VAN BUREN employed, for thirty-six hours, digital compression over the external iliac, in a case of true inguinal aneurism. Being unbearable, the artery was ligated and the patient cured.

Case 6.—One month later, in the same year, DR. GEORGE FOX, in a case of large inguinal aneurism, applied digital pressure to the external iliac for ninety-six hours. On account of the fatigue of the assistants, and being unable to procure more, the pressure was discontinued, the condition of the tumor being much improved. Mechanical compression was then employed for eight days, and the patient was finally cured by ligation of the external iliac.

Case 7.—PROF. WILLARD PARKER, in the same year, in a case of diffuse aneurism of the femoral artery consecutive to ligation, employed digital pressure for seventy-two hours with apparent success; but the pulsation having returned, compression was made by a weight in the groin for seven days, and a cure was effected.

Cases 8, 9.—In 1850, DR. J. R. WOOD treated two cases of popliteal aneurism by digital pressure on the pubes, alternating with Dupuytren's compressor about the middle of the thigh. In the first case the cure was effected in forty-eight hours, and in the second, in eleven hours and a half.

Case 10.—In 1851, MR. NORGATE employed digital compression, in a case of popliteal aneurism, for twenty-four hours, having previously used bad apparatus for five days. This was inefficient, and the femoral was ligated; the operation was followed by gangrene, necessitating amputation, but the patient recovered.

Case 11.—In 1852, MR. J. MONRO had a case of popliteal aneurism in which digital compression was kept up for three days by convalescent patients in the hospital. Mechanical compression was then substituted and a cure resulted in sixteen days.

Case 12.—In 1854, MR. WM. JAMESON employed digital compression for a popliteal aneurism for four hours, when it was discontinued on account of the patient being irritable and rebellious. Mechanical compression was substituted, and a cure was produced in six days.

Case 13.—In the same year, a patient, under the charge of MR. COLLES, cured himself, without assistance, of a diffuse popliteal aneurism, by intermittent digital compression, in seven days.

Case 14.—During the same year, and under the same surgeon, a femoral aneurism was cured in about six days, by partial, irregular, alternating digital and mechanical compression.

Case 15.—M. VANZETTI, in the same year, cured a popliteal aneurism, by digital compression, in forty-eight hours, various apparatus having been previously applied.

Case 16.—In 1855, M. NÉLATON, in a case of popliteal aneurism, tried mechanical pressure for sixteen days. This not succeeding, he substituted digital compression, which was maintained for ninety-four hours. The cure was not permanent. The limb was amputated, and the patient died of purulent infection.

Case 17.—In the same year, the same surgeon employed digital compression conjointly and alternately with direct compression, with apparatus, in a case of arterio-venous aneurism at the bend of the elbow. In several days the cure was effected.

Case 18.—In the same year, M. VANZETTI had an intelligent patient with a popliteal aneurism. Understanding the plan of treatment, which was deferred for twenty days, he himself, during this time, made pressure on the femoral artery, which seemed to have a slight influence upon the tumor. The treatment was confided to six intelligent assistants, and in four hours the patient was cured.

Case 19.—In 1856, M. MICHAUX employed intermittent mechanical pressure, in a femoral aneurism, for four days. Digital compression was then substituted, and in twenty-four hours the cure was complete.

Number.	Operators.	Sex.	Age.	Date.	Variety of Aneurism.	Style of Compression.	Duration.	Result.	Remarks.	Authorities.
1	Edw. Greatrez..	Male	27	1844	Popliteal	Total digital and instrumental.	24 hours	Cure	The patient regulated the pressure.	Medico-Chirurgical Transactions, vol. xxviii. p. 39, 1845.
2	Vanzetti.........	?	?	1846	Popliteal	Dig., primary and alone.	2 days	Inefficient	Ligature of the femoral. Cure.	M. Verneuil's paper.
3	Tuffnell..........	Male	27	1847	Popliteal	Total digital and instrumental.	7 days	Cure	Finger of patient alternating with apparatus.	Dublin Medical Press, vol. xxi. p. 305, 1849; Broca. *op. cit.* p. 808.
4	J. Knight........	Male	48	1847	Popliteal	Digital, total, and alone.	40 hours	Cure	First cure by this method unassisted by other means; apparatus having proved intolerable.	Boston Med. & Surg. Journal, May, 1848; Trans. Am. Med. Assoc., vol. i. p. 169, 1848.
5	Van Buren......	Male	25	1848	Inguinal	Dig., primary and alone.	36 hours	Unbearable	Ligature of external iliac. Cure.	New York Journal Med., vol. ii., new series, p. 168, 1849.
6	Fox...............	Male	24	1848	Inguinal	Digital.	96 hours	Failure	Mechanical pressure for 8 days. Ligature of external iliac. Cure.	Am. Jour. Med. Sci., 1849, new series, vol. xviii. p. 377.
7	Parker...........	?	?	1848	Diffuse femoral.	Digital primary.	72 hours	Inefficient	Aneurism consecutive to ligature of femoral for popliteal aneurism. Compression by weight in groin for 7 days. Cure.	Trans. Am. Med. Assoc., vol. ii., p. 228, 1849.
8	Wood............	Male	30	1850	Popliteal	Digital and instrumental.	2 days	Cure	Digital compression on pubis alternating with Dupuytren's compressor on thigh.	New York Journal Med., vol. vi., new series, p. 304, 1851.
9	Wood............	Male	33	1850	Popliteal	Total dig. and instrumental.	11½ hrs.	Cure		
10	Norgate..........	Male	34	1851	Popliteal	Digital.	24 hours	Failure	Previously bad apparatus for five days. Ligation of femoral; gangrene; amputation. Cure.	Dublin Medical Press, vol. xxvii. p. 247, 1852.
11	Monro............	Male	23	1852	Popliteal	Dig. primary.	3 days	Failure	Made by patients for sixteen days; subsequently mechanical compression. Cure.	London Lancet, vol. i. p. 117, 1853.

12	Jameson.........	Male	45	1854	Popliteal	Dig. primary.	4 hours	Failure	Subsequent mechanical compression and in six days a cure.	Dub. Hospital Gaz., vol. i. n. 5, p. 72, April 1st, 1854.
13	Colles............	Male	36	1854	Diffuse popliteal	Intermittent dig., primary and alone.	7 days	Cure	Compression made by patient.	Dub. Hospital Gaz., vol. i. p. 97, May 1st, 1854.
14	Colles............	Male	32	1854	Femoral	Irreg., alter., dig., and mechanical.	About 6 days	Cure	....	Med. Times & Gaz., Dec. 30th, 1854; Ranking's Abstract, No. xxi. p. 102, 1855.
15	Vanzetti.........	Male	36	1854	Popliteal	Digital.	48 hours	Cure	Various apparatus were tried for a long time before and given up.	M. Verneuil's paper.
16	Nélaton..........	Male	32	1855	Diffuse popliteal	Digital.	94 hours	Inefficient	Previous mechanical compression for sixteen days. Limb amputated; purulent infection. Death.	Broca., *op. cit.* obs. 45, p. 766.
17	Nélaton..........	Male	70	1855	Arterio-venous at elbow	Dig. and other varieties.	Several days.	Cure	....	Broca., *op. cit.*, p. 293, obs. 7.
18	Vanzetti.........	Male	27	1855	Popliteal	Digital, total, primary, and alone.	4 hours	Cure	The patient himself made intermittent, imperfect, digital compression for twenty days.	M. Verneuil's paper.
19	Michaux.........	Male	50	1856	Femoral	Digital total.	24 hours	Cure	Previously intermittent mechanical pressure for four days.	M. Verneuil's paper.
20	Michaux.........	Male	57	1856	Popliteal	Intermittent digital.	7 days	Cure	Previously mechanical compression. Signs of serious disease of heart.	Bost. Med. & Surg. Jour., July 15th, 1858, p. 484.
21	Gherini..........	Male	27	1857	Varicose at elbow	Dig., primary and alone.	3½ hours	Cure	....	Med. Times & Gaz., May 8th, 1858; Omodei Annali, vol. clxiii. p. 99.
22	Michaux.........	Male	52	1857	Popliteal	Dig., primary and alone.	24 hours	Cure	Previously bleeding, low diet and digitalis. Compression partial and total.	Lancet, Sept. 11, 1858, p. 202; from Jour. de Med. et de Chirurg. Prat., May, 1858.
23	S. W. Gross.....	Female	32	1858	Femoral	Dig., tot., pri. and alone.	45 hours 55 min.	Cure	....	North Amer. Med.-Chir. Rev., Jan. 1859.

Case 20.—The same surgeon, in the same year, in a case of popliteal aneurism, first employed a tourniquet and then substituted digital compression. A cure was effected in seven days, the compression having been several times withheld.

Case 21.—In 1857, M. GHERINI employed digital compression, primarily and alone, in a case of varicose aneurism at the elbow. A cure was effected in three hours and a half.

Case 22.—In the same year, M. MICHAUX, in a case of popliteal aneurism, employed digital compression, primarily and alone, first partial and then total, and effected a cure in twenty-four hours.

For further convenience of reference these cases have been drawn up in the form of a table, from which it will be seen that fifteen were successful and eight unsuccessful. The number of the different varieties and the result are shown in the following table :—

Variety.	No. of Cases.	Cure.	Failure.
Popliteal	15	10	5
Femoral	4	3	1
Inguinal	2	...	2
Arterio-Venous	2	2	..
	23	15	8

Cures.—In *five* cases the digital compression was employed *primarily* and *alone*. Nos. 13, 18, 21, 22, 23.

In *four* cases digital compression succeeded after apparatus had been abandoned. Nos. 4, 15, 19, 20.

Five times digital compression was alternated with pressure by apparatus. Nos. 1, 3, 8, 9, 14.

Once digital compression succeeded when combined and alternating with apparatus and direct compression of the tumor. No. 17.

Failures.—In *six* cases digital compression was tried before any other means. Nos. 2, 5, 6, 7, 11, 12.

In *two* cases digital compression had been employed after apparatus had been abandoned. Nos. 10, 16.

After examining these unsuccessful cases, the question naturally arises, were they all good tests of this mode of treatment, and would it not have been possible to have cured several of them had the treatment been continued for a longer time ?

Of these eight cases, it is probable that in No. 7 the cure would have been complete, had the compression been kept up several hours longer; in Case 11, the pressure must necessarily have been imperfect, on account of its having been applied by convalescent patients in the wards of a hospital. In Case 12, it was abandoned after four hours, because the patient was rebellious. In Cases 5 and 6, the pressure was in one unbearable, and in the other no more assistants could be procured; in both, moreover, the aneurism was inguinal, where, on account of its unfavorable situation, it is exceedingly difficult to maintain pressure, and consequently a favorable result could scarcely be expected. Cases 2, 10, and 16, are the only ones which we would regard as perfect failures. In examining the ultimate results of these unsuccessful cases, we find that in four the artery was subsequently ligated, and all but one were successful, Nos. 2, 5, 6, 10; two were amputated, Nos. 10, 16; and one patient died of purulent infection. In three cases, subsequent mechanical compression resulted in a cure, Nos. 7, 11, 12. In Cases 7 and 12, the tumor was so modified as to render a cure by apparatus effectual. In Case 11, digital compression rendered apparatus bearable.

The length of time required for the cure of fourteen of these successful cases—No. 17 has to be rejected, as the period is so indefinite—averaged two days and two-thirds. When the compression was primary and employed alone, the average was two days and thirty minutes; when double and alternate, three days and seven hours; and when employed after apparatus had been abandoned, the mean duration was two days and twenty-two hours. Let us compare these results with those of aneurism treated by mechanical compression alone. Thus, Mr. Hutchinson found in the London hospitals that of twenty-six cases of femoral and popliteal aneurism cured by this method, the average duration was nineteen days, while in the Dublin cases the mean duration of treatment was twenty-five days.* M. Broca has found that in ninety-nine cases the length of time required for a cure was a little less than fifteen days.† At the present time we may therefore state that digital compression alone has effected cures in the shortest time. Next in order comes alternate digital and mechanical compression; and lastly, mechanical compression alone requires the longest time for a cure, although the duration of this plan is far less than that of the treatment by the ligature. The reason why mechanical compression has not succeeded in a shorter space of time, is on account of its mal-application in most cases; and when this point has been properly attended to, there can be but little doubt that a cure will result in half the time it will by the ligature.

A striking point in these twelve cures is, that five were effected by pressure with the finger alternating with the use of the apparatus. In two of these cases the pressure was regulated and kept up by the patients, Nos. 1, 3. In the remaining three, Nos. 8, 9, 14, the compression was made by assistants. As this plan is so simple, has been attended with the best results, affords such relief to the patient and operator, and has always effected a cure whenever employed, it should be preferred to all other methods.

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* See Erichsen's Surgery, second edition, pp. 522–23; London, 1857.

† Broca des Anéurysmes, etc., p. 844; Paris, 1856.

The case of Mr. Colles, No. 13, is interesting from the fact that the patient cured himself in seven days, by irregular intermittent digital compression, the treatment being carried on without the knowledge of the surgeon.

In M. Vanzetti's case, No. 18, the patient had kept up the pressure himself for twenty days previous to the interference of the surgeon, so modifying the tumor as to render the cure perfect in four hours.

Thus it will be seen that in a little more than one-fourth of these cases the patients had been, in a greater or less degree, instrumental in the cure, leaving the surgeon but little to do.

Another interesting fact is, as M. Broca observes, "that digital compression is an American procedure, and the principal merit thereof belongs, undoubtedly, to Prof. Knight," who was the first to cure a case by this method, unassisted by apparatus. Besides his case, six others have been operated on in this country, making seven of the twenty-three cases; four of which were successful.

Although the first cure was effected in this country, the case was the second that had been treated by digital compression alone, the first having been in the hands of M. Vanzetti, Professor of Surgery in the University of Padua, who did not, however, succeed in curing his patient. The priority belongs, therefore, to the latter gentleman, who has, moreover, applied this method in four cases of external phlegmonous inflammations, with happy results.

The compression should, in our opinion, in cases of popliteal and femoral aneurism, when not contra-indicated, be made upon the femoral artery as it lies over the pubic bone. At this point it is more easy of application, and causes less pain to the patient and fatigue to the operator. If made a little lower down, the inguinal glands are apt to become inflamed and give rise to great suffering. The vein, moreover, is here on the inside of the artery, and if the pressure be made over the course of the artery, it alone will be compressed. Throughout the whole extent of the rest of the thigh, the vein will be sure to be involved.

We trust that this plan of treatment may be more generally adopted than it has been heretofore. It is always possible to obtain a sufficient number of assistants in private and hospital practice, who would be but too glad to avail themselves of such rare opportunities for observation, and do all in their power to lessen the dangers and sufferings of a fellow-being. Its great value certainly calls for repeated trials; let them be made and let new facts be added to those already presented, so that we may more readily arrive at the comparative value of all the modes of treatment of this class of cases.

From all the data to be found in these cases, we may deduce the following propositions:—

I. Digital compression, uncombined with apparatus, was first attended with success in the hands of Dr. Knight; but to M. Vanzetti is due the merit of having first introduced it into practice.

II. It has never been followed by bad consequences, and when not successful, it so modifies the tumor and the collateral circulation as to render a cure by other means almost certain.

III. It has been employed alone, either previous or subsequent to mechanical compression, in fourteen instances, eight being failures.

IV. In only seven cases has it been employed primarily and alone, and in all but two with perfect success.

V. When double and alternating, it has effected cures in every case, five in number, and therefore deserves special attention.

VI. In most of the cases the compression has been total; but this is not necessary for a favorable result.

VII. It has effected cures, whether it was continued, interrupted, or intermittent; in some cases the patient applying the pressure.

VIII. When properly employed and continued for a sufficient length of time, and the cases are suitable ones, it can scarcely fail to accomplish a cure. Inguinal aneurisms are not fit cases for this procedure.

IX. It is less apt to give rise to inflammation of the integument, and has been borne when mechanical pressure has produced an eschar.

X. It can be used when apparatus has failed or is intolerable. In a majority of these cases, cures have been accomplished.

XI. In certain situations it can be made to bear upon the artery alone. It is far less painful and requires a much shorter time for a cure than any other method of treatment.

ART. III.—*Case of Congenital Cataract; Total Blindness for Sixteen Years; Operation on Both Eyes; Keratonyxis and Sclerotonyxis; Restoration to the Enjoyment of Sight; Subsequent Unimpaired Vision up to the Present Time, a Period of Twenty-one Years.* By JOHN S. ROHRER, M.D., of Philadelphia.

THE subject of this case, at the time of the operation, was a young lady sixteen years of age, who had been afflicted with cataract from her birth.

Her history in connection with this affection has been traced back thirty-seven years, and, therefore, contains some points of interest.

When the patient was about eight years old, her eyes were examined with a view to an operation, but I have not been able to learn what circumstances were present at the time to render the result doubtful; still it is evident that some complication with the cataract, either local or general, must have existed, for, upon further consideration, the original design of an operation was relinquished. Whatever the delaying cause may have been, it is certain that many oculists deem it proper to wait for an "age when reason and reflection in the patients will enable them more properly to estimate the value of sight, and render them more sensible of the propriety of submitting patiently to the operation."

Her parents, having been informed that the prognosis was unfavorable, did not think it necessary to seek further medical advice, and permitted her thus to grow up to the age of womanhood, regardless of the propriety of sending her to any institution of learning for this class of pupils. Being thus deprived of sight and the benefits of education, and living in a secluded situation with her parents, who were now advanced in years, and moreover being naturally intelligent, and of a sprightly disposition, she sought her friends and relatives at a distance, to aid her in one more effort to obtain her sight; and in the confident expectation of this favor she was not disappointed. Her friends at once encouraged her in the enterprise; and in view of her helpless situation offered her every facility in obtaining medical aid, which finally resulted in submitting herself to my care, with a firm resolution on her part to bear the operation with all the strength and fortitude in her power. All the advantages and disadvantages of a successful or unsuccessful operation were fairly laid before her, and having arrived at an age of discretion, she was advised to deliberate as to the course she intended to adopt, and in either case to abide by the consequences.

The eyes were deeply sunk in the orbits, and rather smaller than natural, and the cataracts presented a dense appearance of a light-gray color, but were not as large as cataracts of a soft and caseous consistence are usually described.

Having duly considered the nature of the case, I proposed performing the anterior operation, or Keratonyxis, and for this purpose provided myself with several very slender needles, of different shapes and sizes, to meet any emergency. The one I proposed to employ was expressly made by the late John Rorer, cutler, of this city, and was expected to pass through the cornea with great facility. It was a slender, straight needle, with a double edge for a short distance, slightly spear-pointed, and not much larger than a common sewing needle, but possessing sufficient strength to pass through the dense cornea without the risk of breaking.

The only impediments visible to a successful operation were the deep-set eyes already mentioned, a slight tendency to ophthalmia, and a chronic inflammatory affection of the eyelids, to which she was subject, and a restless and rolling motion of the eyes which she had acquired, and which is so common in persons born blind, impeding the easy introduction of the needle.

Having previously prepared the system of the patient, the extract of belladonna, diluted with water to the consistence of cream, was smeared on the brows and eyelids. After the pupils were sufficiently dilated the patient was seated on a chair before me, near the light of a window, the right eyelid being secured by two fingers of an assistant, who at the same time supported the head.

The needle was introduced through the cornea, about a line or more in advance of its junction with the sclerotica, and passed directly through the pupil to the capsule, which was lacerated by a few strokes from above downward, and then passed into the substance of the lens, which latter was found to be soft and pulpy; a few motions of the needle completed the operation, and it was gently withdrawn, leaving the capsule and lens in situ.

The difficulty experienced in this operation was the resistance of the cornea to the needle. It required much more force to push it through the cornea than was anticipated, the latter yielding to indentation before the needle could be passed through it, which caused the iris to contract, so that it became necessary to arrest the motion of the instrument for a few seconds to permit the pupil to dilate sufficiently to finish the operation. In consequence, therefore, of the embarrassment experienced by the tardy passage of the needle through the cornea, I resolved, in the left eye, to operate through the sclerotica behind the iris.

As soon as the patient was composed I introduced Scarpa's needle, made straight and reduced to the smallest possible size, into the left eye through the sclerotica, about a line and a half behind the margin of the cornea, and a little above the centre of the ball, and passed it to the capsule, which I lacerated by drawing it across in several directions, when it was pushed into the substance of the lens, which was cautiously broken up as in the other eye, and left remain for absorption. Sight was also observed in this eye as soon as the needle was withdrawn. The extract of belladonna was now smeared round the margin of the orbit, cool dressings were applied, and the patient was removed into a dark room prepared for her. On the second day, when the dressings were temporarily removed, the patient could discern light from the window as before. No inflammation of any account followed, and in the course of a week the cataracts were sufficiently absorbed to enable the patient to see objects in the room. The process of absorption went on gradually, and the sight continued to improve, so that in a few weeks more the patient could walk from one room to another and discern persons and things around her. But in the exercise of this new faculty she had many novel difficulties to encounter. As to distance she had no appreciable knowledge by sight, and when left to take care of herself would frequently walk up rather close to objects, and sometimes bring her head too suddenly in contact with the wall, or step over articles of furniture near her. It required, therefore, some days training to get over these difficulties and to judge correctly of distance.

What is equally remarkable in sudden recovery of sight from congenital cataract, as exemplified in this case, is the illusion experienced at first in handling objects. For instance, the patient in reaching for a knife or fork would heedlessly, as it were, direct the hand to the wrong end, and take hold of the blade instead of the handle. The knowledge, it must be understood, of directing the hands properly is acquired by habit, as in the case of little children.

With colors she was both gratified and amused, as presenting the greatest novelty in her late acquisition of sight; and the impression which they made on her mind was such that the name of any color once mentioned was never forgotten, or one mistaken for another.

Several incidents may be related to show the force of habit, and the training of the eye which is necessary to enable the patient to distinguish objects rightly, and appreciate the use of colors and their combinations in representing objects.

Colored pictures representing dogs, cats, cows, horses, etc., which were presented to her soon after recovery of vision, could not be recognized by her as such, although they were already familiar to her sight; and when directed to examine them closely, could only see black, white, or yellow spots, and projections in different directions, according to the nature of the painting; but by a little practice, after being informed that the colors and curves represented the shape or figure of the animals, and by tracing the outlines with the finger, and making the same curves with the hand over the body of the animals in question, she soon comprehended the representation. The deception to her inexperienced eyes, it may easily be imagined, was on account of the flatness of the surface of the paper or canvas on which the animals were painted, having been accustomed to know them only by their bulk in feeling and handling them; each color, shade, or line, being recognized by her as distinct objects.

From the above will be seen the difficulty she had experienced in recognizing the resemblance or representation of things with which she had already been familiar by sight; but many objects were brought before her to test her vision which had never been seen by her, and which were only known to her by the sense of touch; such of course she could not recognize by sight, either by their actual presence or representation on paper, however well executed, thus causing doubts among some of her incredulous friends as to the integrity of this newly acquired faculty. But their delusions were soon dispelled; a little familiarity with persons and things soon enabled her to recognize every object near her, and to discern the features of different persons in her presence, until finally, by the aid of glasses and time, she became familiar with smaller objects, and could distinguish letters of ordinary sized type. It may be proper here to state that my personal observations ceased soon after the restoration of her sight, my patient having removed with her friends to the "West," and for the last fifteen years I have only occasionally heard from her; but the accounts which I received were very flattering; her sight continued to improve for several years subsequent to the operation, and that restless, rolling motion of the eyes, at first so troublesome, had almost entirely disappeared. A few years ago I received a communication from her giving a short account of her sight, with a request to procure cataract glasses. At this time she could see very well without them, and had not used any for several years.

Art. IV.—*A Case of Uterine Hemorrhage Three Weeks After Delivery.* By G. A. Kunkler, M.D., of Madison, Indiana.

The occurrence of uterine hemorrhage several days or weeks after delivery is such an unusual accident that I have considered the following case worthy of particular notice: Mrs. A——, aged about thirty, the mother of several children, and possessed of a strong, robust constitution, was delivered, during May, 1855, of a large and healthy child. The labor had been an easy one of about eight or nine hours' duration, the placenta following in the course of fifteen minutes. The patient kept her bed for about five days, and did well, no unusual symptoms of any kind presenting themselves.

On the twentieth day after her confinement I was hurriedly called to see her, late in the evening, and was informed that for several hours blood had been escaping almost continually from the vagina. She was already very much prostrated from the hemorrhage; the countenance pale and anxious; the pulse exceedingly weak, and making over 115 beats per minute. The bed upon which she was lying was perfectly saturated with blood, and her extremities cool and clammy. The discharge was still quite profuse when I arrived; the amount lost could hardly be estimated, but must have been great, to have reduced so strong and healthy a person to such an extent.

Upon examination the vagina was found partially filled with several large coagula, and the os uteri dilated, readily admitting two fingers; the uterus itself was rather larger and softer than is usual at this period. A bladder filled with pounded ice was applied to the abdomen, followed by compresses dipped in ice water; three drachms of the wine of ergot were given at once, to be repeated in fifteen minutes, and absolute quiet and rest in the horizontal posture enjoined. A moderate contraction of the uterus followed; and upon the frequent exhibition of powdered ergot and tannin the discharge gradually and steadily diminished in quantity, until the fourth day, when it ceased entirely. To relieve the constipation, an enema of cold water with sulphate of magnesia was occasionally administered. With the aid of a nourishing and proper diet the patient convalesced rapidly. She was kept at perfect rest for about ten days afterwards, and has since been confined again.

I was unable to discover any positive and satisfactory cause of the hemorrhage in this case. The patient had not exerted herself to such an extent, at any time, that it could be ascribed to over-exertion; she stated, however, that during that day she had been in a violent state of mental excitement on account of some family difficulty; this is the only cause to which I could attribute it. The hemorrhage could not have resulted from a retention of a portion of the placenta, as the physician, Dr. Gräeter, who attended her in her confinement was positive that everything had passed, and besides the patient had no discharge of any kind after the seventh day, until the time I was called in.

During the month of July, 1857, while attending physician to the County Asylum, a case somewhat similar to the above came under my care. In this case the hemorrhage was caused by the retention of putrid coagula. The woman, an inmate of the asylum, was delivered by myself of a large, healthy child. The labor was rather tedious, owing to inertia of the uterus, requiring the free exhibition of ergot. The placenta followed about half an hour after the birth of the child. The lochia were very profuse, but the discharge had nearly disappeared on the sixth day after her confinement; but on the eighth day, while walking across the room, a profuse hemorrhage appeared. On making a vaginal examination, the os uteri was found dilated, and on passing two fingers into the uterus, several large and fetid clots were removed; the hemorrhage then ceased. The free use of ergot, a firm bandage around the abdomen, and injections into the vagina, soon restored her completely.

Cases like the above are very annoying, especially to the younger practitioner, from the fact that the hemorrhage is frequently regarded as *prima facie* evidence that there was some mismanagement in the third stage of labor, or want of proper care in the subsequent treatment; and it is not impossible that the prevalence of this opinion may, in some measure, account for the silence of authors upon this subject.

Although secondary hemorrhage is very often the result of ignorance and rashness, yet no reasonable person would or could maintain that it was invariably the case, any more than it could be said of any of the various casualties incident to labor, such as convulsions, ruptured uterus, etc.

In the *New York Journal of Medicine* for September, 1850, Dr. Ferguson has reported an interesting case of hemorrhage two weeks after delivery; and in the *New York Annalist*, October, 1847, Dr. Stimson has reported a case, where hemorrhage occurred on the tenth day subsequent to parturition.

Art. V.—*Proceedings of the Pathological Society of Philadelphia.*

Wednesday Evening, October 13th, 1858.

The President, Dr. Gross, in the chair.

Tubercles in the Cerebrum and Cerebellum.—Dr. **Packard**, in presenting these specimens, said:—For notes of this case, I am indebted to Dr. F. W. Lewis and Dr. Dunton, who attended the patient.

James Gray, aged six, of a hereditary scrofulous habit, slipped, or was pushed, from a sidewalk, in September, 1857, and in his fall struck the back of his head forcibly against the curb-stone. The blow stunned him for a time, and for several weeks he had occasionally severe attacks of pain in the occiput. He however continued otherwise well until the latter part of December, when the paroxysms of pain became more frequent and intense, recurring several times daily.

From this time he grew worse and worse until April 26th, 1858, when he was admitted into the Children's Hospital, under the care of Dr. Penrose. On admission his symptoms were as follows:—Head rather large, body and limbs decidedly emaciated; expression of countenance "cerebral," with a marked amaurotic stare, and considerable dilatation of both pupils, particularly of the *left;* complexion somewhat waxy, with irregular flushing of one or both cheeks; decubitus dorsal, with slight flexion backward of the head. His intelligence was not impaired, nor were his special senses, except, perhaps, that of vision. He complained at intervals of intense pain in the occiput, and during these paroxysms he would utter short, sharp cries; their duration was usually two or three minutes. They occurred several times in the twenty-four hours, and were most aggravated at night. The temperature of his skin was natural; his head was not abnormally heated; his respiration was unaffected; his pulse regular, full, about 80 per minute. His appetite was voracious, but his digestion rather sluggish, and his bowels constipated.

He was removed from the hospital in about ten days, having derived no benefit during his sojourn.

From this date the unfavorable symptoms made very rapid progress. His emaciation became very considerable, especially in the body and extremities; his complexion more waxy, and the irregular flushing of one or both cheeks more vivid. In addition to the decubitus before mentioned, his knees became drawn up. His intellect was still clear; the amaurosis was now complete. There was no unusual heat of head, but the temporal and carotid arteries throbbed very forcibly during the paroxysms of pain, which amounted to agony. These attacks now recurred about every half hour, with a strongly-marked tendency to remission on the alternate days.

His digestion, respiration, and pulse, (except during the attacks,) continued much as before; his appetite was capricious, although mostly very voracious. It was always observable that the act of mastication continued for some time after his food had been swallowed. Owing to his inordinate appetite he had frequent dysenteric attacks; toward the close he began to pass his urine and stools involuntarily. The urinary secretion was generally copious, high-colored, of neutral reaction, and showed a tendency to deposit phosphates shortly after being passed. No priapism was at any time observed.

About the beginning of July, the emaciation and debility became so extreme that his death was daily looked for. He rarely moved, but lay with his knees drawn up, his head thrown back, his eyes open, his pupils (especially the *left*) enormously dilated, the conjunctivæ inflamed and covered with a viscous secretion. His pulse became more frequent and irregular, and he could hardly be seen to breathe at all. From this apparently almost lifeless condition he would at times rouse himself and call for food.

July 23d.—He cries at intervals; answers questions, but never talks. Flexors of both upper and lower extremities in a state of tonic contraction. He has some difficulty in swallowing; tongue red and covered with *muguet.* His bowels are quiet, and have been for three days past; previous to this he had diarrhœa.

July 25th.—He has less difficulty in swallowing; vomits occasionally; was several times convulsed during the night.

July 30th.—An ulcer appeared on the right cornea. He gapes continually.

August 17th.—Emaciation much increased; contraction of flexors more decided.

August 26th.—Diarrhœa; abdomen much retracted, with enlargement of its superficial veins.

August 30th.—Has had no convulsions for the last two weeks, but lies moaning; occasionally his breathing seems to stop entirely. His death occurred on the 3d of September.

By the kindness of Dr. Dunton, I assisted at the autopsy, which was made thirty-three hours after death; the head only was examined.

Brain softened, and a very large quantity of serous effusion in the ventricles. The cineritious layer was very thick. In each lobe of the cerebellum was found a tumor of about the size of a walnut, rounded, deep-yellow, of firm consistence, and presenting traces of a concentric formation. A similar tumor, but of smaller size, was taken from the posterior portion of the right cerebral hemisphere.

Under the microscope, the structure of these tumors appeared to be tuberculous. Some of the elements observed bore some resemblance to those seen in amyloid formations in the brain.

A case remarkably similar, in some respects, to the one I have now reported, was published by Dr. Pepper, in the *Medical Examiner* for December, 1856. In that case there was, however, no injury known to have been received, and the course of the disease was much more rapid, (only four months;) the attacks were also much more epileptiform in their character. In my notes taken at the time of the autopsy, some particulars are set down, which were omitted by Dr. Pepper because they had no direct bearing upon the point discussed in his article.

The calvarium being removed, the skull was found to be excessively thin—having not more than half its proper thickness. The inner surface was rough and vascular, and much darker than normal; on the outside, a patch, reaching from the coronal suture back as far as the division of the skull, (in removing the skull-cap,) and on each side to the line of attachment of the temporal fascia, was discolored in much the same way, and the vessels most beautifully injected.

On removing the brain with the dura mater, the base of the skull had a similar appearance, being over the sphenoidal cells so thin as to feel like a mere membrane. This change was especially well marked in the channels for the lateral sinuses, which seemed deepened as if by an erosive action. The surface of the brain was much congested, and a large quantity of clear serum escaped when the dura mater was cut into.

The cerebellum was softened down, and within its substance, just between the two lobes, was a tuberculous deposit of the shape of an English walnut; this mass weighed half an ounce, and measured an inch and a quarter in diameter.

Pneumonia and Pleuritic Effusion occurring in Enteric Fever, with signs of Perforation of the Intestine, but without any post-mortem evidence of this lesion.—DR. HALL exhibited, for Dr. Albert H. Smith, an ulcerated intestine and inflamed lung, removed from the body of Chas. Huttner, aged thirty-two, German, who was admitted on the 11th of September into the Pennsylvania Hospital. He had been taken sick, about two weeks previously, with enteric fever, and passed through the ordinary course of the disease without having, as far as could be learned, any remarkable or unusual symptoms. On the 27th of September he was convalescent; the rose-spots had disappeared; the pulse was regular; the bowels very slightly inclined to diarrhœa; no tenderness of abdomen; no chest symptoms, except an occasional appearance of sonorous rhonchi; and although quite weak, his strength was gradually returning and all the functions being well performed.

In this way he continued (great care having been taken to guard him from exposure to cold, and from the use of any solid or irritating diet) until the morning of the 6th inst., when he was found with a cold, clammy skin, the pulse 160, feeble and irritated, the countenance anxious and distressed, with great pain in abdomen, slight tympanites, and a tendency to delirium. On the supposition that perforation had taken place, he was placed upon beef-essence and milk-punch; dry cups were applied to the abdomen, and sufficient laudanum was given to narcotize. The symptoms continued for twenty-four hours, when they entirely subsided. The skin became warm and dry, the pulse fell to 110, the pain in abdomen ceased, no tympanites was present, and the patient felt altogether more comfortable, although greatly prostrated. The stimulants and nourishment were continued.

In about twelve hours another set of symptoms had developed themselves. In addition to the dry, hot skin and frequent pulse above mentioned, there came on, for the first time, violent chest symptoms: great oppression and dyspnœa, constant cough, with expectoration of bloody sputa; entire flatness of the posterior portion of both lungs and the lower lobes anteriorly; subcrepitant rhonchi on right side, at base; crepitant rhonchi and friction sound on left side. The patient was dry-cupped over the chest, blistered on the left side, and kept constantly turning so as to prevent hypostatic congestion. Mustard poultices were applied to the extremities, and carbonate of ammonia was administered, but he continued to sink from this time, and died on the 9th.

The autopsy showed congestion of the lower part of right lung, with red hepatization of the lower lobe of the left; over the whole pulmonary pleura of the left side there were thick patches of lymph, and in the pleural cavity about a half-pint of serum. There was no other lesion except the ulceration in the small intestines, which was extensive, but appeared to be healing. No evidence of perforation could be detected.

Phthisis with Paraplegia.—DR. HALL exhibited, also for Dr. Albert H. Smith, a tuberculous lung and a softened spinal marrow:—M. B., aged fifty-four, was admitted into the Pennsylvania Hospital September 27, 1858, with evident signs of tubercle at the apices of both lungs. He had a cough, and had been gradually losing his strength for six weeks. He was very feeble, almost unable to walk, dragging the right leg in his attempts; the countenance was pale, with a particularly anxious and haggard expression. His symptoms gradually grew worse, until complete paraplegia of the lower limbs ensued. There were no cerebral symptoms; sensation and voluntary motion declined gradually and simultaneously in the limbs; there was no spasmodic action. He died from general prostration, his death being hastened by suffocation from inability to expectorate.

The autopsy showed both lungs infiltrated with tubercles; a cavity existed at the upper portion of the right lung; the heart, brain, and the other viscera were healthy; on removing the arches of the vertebræ, there was found in the arachnoid about six ounces of serous fluid; the pia mater was greatly injected; the congested vessels ran in places into the substance of the cord, which was completely softened.

Gangrene of the Spleen.—DR. HALL presented the following paper on gangrene of the spleen, with a water-color drawing of a specimen of the disease:—

Of this abnormal condition of the spleen Rokitansky observes, "that it is as rare an occurrence in the spleen as in the liver; we have had an opportunity of observing it once in a chronic tumor of the spleen, affecting the organ to a considerable extent."

Baillie* remarks "that it is very rare to find the substance of the spleen either in a state of inflammation or suppuration, but such cases have been occasionally observed and related by authors. Instances have also been related where the spleen has been observed to be 'mortified,' but this I should believe to be even much more rare than the former."

As a witness on the other side, Portal† states that "Gangrene of the spleen is observed rather frequently, (assez souvent;) it is recognized by the softening of its tissue, and the fetid odor which it exhales; it is the frequent consequence of the inflammation of this viscus, and then the rational symptoms (les symptôms exposés) above mentioned diminish or cease suddenly, and mortal weakness and sinking succeed. It has also been remarked in subjects who have died of malignant fevers."

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* Morbid Anatomy, p. 168.

† Anatomie Médicale, tome v. p. 336.

Case.—During my service of House-Surgeon in the Pennsylvania Hospital in 1856, was admitted on the 25th of September a stout, vigorous young German, Michael H——, aged twenty-three, with an extensive gunshot wound of the upper part of the right arm, which had cut clean across the brachial artery at the upper third of the biceps muscle of that side. There was not any bleeding of consequence at the time of admission, although we were told that there had been, an hour before; shortly after the occurrence of the accident, a Spanish windlass had been twisted above the wound, but no ligatures were applied. The brachial artery was tied in the wound, and eight or nine ligatures were put on smaller vessels after admission into the house. The arm from the site of injury down to the fingers was cold; there was no pulsation in the arteries below the wound. A consultation was held, but the man was so depressed from the shock that amputation at that time was out of the question. On the next morning, however, the patient having rallied sufficiently, Dr. Neill (the surgeon on duty) amputated the arm about three inches below the axilla.

October 27th, (a month after the operation.)—Pulse 102; patient feverish, with hot skin and flushed cheeks; great deal of deep suppuration in the stump, an erysipelatous blush on its surface; complains of pain in the right "hypochondrium." [I wish the Members to remark this hypochondriac pain, as I think that it was reflexly sympathetic from the inflamed spleen in the left hypochondrium.]

The next day he had a slight chill, followed by fever and sweating; pulse 99, full and quick; tongue a little furred, yellow; "*pain* still in the right hypochondrium; *increased* by pressure."

November 4th.—My term of service in that ward having expired, I handed over my charge to Dr. George H. Humphreys, my successor in office, still, however, by his kindness, observing with him the progress of the case.

Some time later, unmistakable symptoms of pyaemia developed themselves, became confirmed, and, as usual, in spite of any treatment, carried off the patient in about four weeks' time.

Sectio cadaveris ten hours after death.—Rigor mortis well pronounced; body not much emaciated, well formed. Head not permitted to be examined. The bone of the amputated arm presented a ring of necrosis one-quarter of an inch in length. Pus in the veins of the stump. On opening the thorax one quart and a half of straw-colored serum was found in the pleural sac. The lungs were much congested, with localized spots of inflammation; several small abscesses of one inch in diameter were found in the posterior aspect of the lungs. Liver healthy. The spleen was lobulated; it measured five and a half inches in length, and four inches in breadth; form natural, *i. e.* slightly concavo-convex. Color of a bright-red, approaching crimson. On its anterior inferior surface was a patch of gangrene one and a half inches in circumference. This was of a dark, greenish hue; mottled; color well defined; not shading off into the color of the surrounding texture; flaccid to the touch, with a sense of fluctuation. Odor, garlic-like.

There was a well-marked line of demarcation, of a pinkish color, with numerous vesicles upon its surface. The discoloration was superficial, merely involving the capsule, not going down into the splenic substance; beneath this was a cavity two inches in depth, filled with a soft chocolate-colored matter. There was a small cherry-like cyst on the omentum, just beneath the spleen. Bladder distended with urine.

As already stated, gangrene of the spleen is of very rare occurrence. Rokitansky* speaks of an inflammation of the spleen, in which "the portion affected is converted into a puriform creamy mass, or into a sanious, greenish, greenish-brown, or chocalate-colored pulp." Magaziner† gives an account of an epidemic gangrene of the spleen that occurred during the year 1831, at Dorfe Mandrowa, Russia, called by him the "Siberian Epidemic," or "Splenitis Gangrenosa."

A male and three females were seized with a burning pain under the præcordial region; with nausea; pain in the abdomen, and especially about the spleen. Two died, and a post-mortem examination gave the following appearances: Body of the patient who died on the third day of the disease. "A dark spot on the left side of the abdomen; traces of inflammation here and there on the peritoneum; stomach and intestines distended with gas, and inflammation of their external surface; the spleen, much enlarged and tender; when divided gave issue to a great deal of dark blood, and presented on its surface *a large* gangrenous point." Nothing abnormal in the head or chest.

The appearances were the same in the body of the other patient.

On the 29th January, 1831, two females were seized with the same symptoms, and the writer now recognized the existence of the "Siberian Epidemic," or "Splenitis Gangrenosa." There is a reference to this Siberian Epidemic in *Canstatt's Jahresbericht*‡ for 1851.

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* Path. Anat., vol. ii. p. 137, Am. ed.

† Kleinert's Repertoire, from the Russian Military Med. Gazette, No. 3, 1833.

‡ Band vi. p. 15.

Bright* notices the occasional occurrence of gangrene of this organ, and cites the case of Anne Howell, a house-maid, aged twenty-one, received into Guy's Hospital, January 24th, 1829, with symptoms of great depression, in a most reduced state, having been ill some weeks and undergone active treatment for what was supposed to be carditis. On admission there was observed a rapid, weak pulsation of the heart, and frequent vomiting, under which she sunk in about ten days.

Sectio cadaveris.—In the abdomen there were some cellular adhesions of long duration between the liver and diaphragm, and between the liver and stomach; on the left side were more recent adhesions in the neighborhood of the spleen, circumscribing a cavity bounded above by the under-surface of the left lobe of the liver, to the inner side by the stomach, and to the outer side by the spleen. This cavity contained an offensive dark-colored matter, with "a strong gangrenous odor," which was produced by the breaking down of a portion of the spleen, extending to no great depth into the organ, the remainder of which was firmer than natural, and of a *red color.*

I wish to call the Society's attention to the red color of the spleen, as it was so well marked in the specimen before them. It was not owing to the action of the air upon the organ, but presented the same hue at the moment of removing the organ from the body. It is undoubtedly the intense red of acute inflammation.

Many cases of disorganized or broken-down spleens are quoted by Lieutaud.† Of course what some of these older writers say on this subject must be received with caution; but still, when they describe the appearances of gangrene, together with "a most offensive odor," it is but right to believe that what they saw was gangrene: "A man‡ died on the eighteenth day of a continued fever; the spleen was tumid, livid, and 'greenish,' from which, when incised, a great quantity of matter like black pitch flowed forth." Also, a case§ in which the spleen was livid and black, a portion cut off, as though amputated. Another,‖ in which the spleen was gangrenous and partly destroyed. Finally,¶ a gangrenous and putrid spleen, after a pneumonia.

Cases are cited by Morgagni,** one in which the spleen was impregnated with a gangrenous blackness, and exhaled "a most offensive odor."

The "offensive odor" here mentioned is of more importance as a point of medical evidence than the gangrenous blackness so often dwelt upon.

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* Guy's Hospital Reports, vol. iii., 1838.

† Historia Anatomico-Medica, tome i. p. 223.

‡ Observat. 958.

§ Ibid. 961.

‖ Ibid. 966.

¶ Ibid. 970.

** Epist. Anat.-Medica, xxv. art. 16.

This black color may exist without gangrene; it should not, taken alone, be considered as a sign of gangrene.* Morgagni† cites a case after peripneumonia:—"The abdomen being opened, a heavy odor was perceptible, as if from inflamed viscera, taking on gangrene. The liver was whitish, but the spleen was affected with a gangrenous blackness."

Dr. Janney, of this city, informs me that he has seen a case in which the spleen was three times its natural size; he cannot recollect how large the gangrenous portion was, as it occurred years ago during an epidemic of intermittent; it had a gangrenous odor, and he had no doubt that it was gangrene.

Briefly to compare other states of the spleen with gangrene, I shall indicate how a lesion which resembles it most—abscess—is found in the organ. Abscesses of the lungs and liver are not unusual after operations, injuries of the head, compound fractures, puerperal phlebitis, and even suppuration around a foreign body; but in the spleen they are not often observed. Speaking of pyæmia, Nélaton‡ remarks the frequency of abscesses of the lungs and liver, but does not notice their presence in the organ under consideration. Mackintosh,§ however, mentions a case of a large abscess of the spleen, after an amputation of the leg. In the fourth volume of the *Transactions of the Pathological Society of London* is reported an abscess of the spleen after puerperal phlebitis.

The splenitis in these cases is consecutive, and owing to an alteration in the blood crasis. Cases illustrative of this particular point, and most practical remarks upon its pathology, are given by MM. Huguier and Littré.|| Very interesting cases of abscess of the spleen, after fracture of the skull, leg, (compound) etc. are to be found in the *Lancet* for 1827–28, vol. ii., by Thos. Rose, Surgeon to St. George's Hospital.

There are only three conditions with which gangrene of the spleen can be confounded. These are:—

1. Apoplexy.
2. Abscess.
3. Post-mortem change of color.

That it was not apoplexy is clear from the description given by MM. Mignot and Lemaistre.¶ One of these cases was from continued fever, the other from a paroxysm of intermittent.

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* Path. Générale, 1856, p. 545, (Chomel.)

† Epist. xxi. art. 29.

‡ Clinical Surgery, p. 154.

§ Practice of Physic, vol. i. p. 355.

|| Journal Hebdomadaire de Médecine, tome vii. p. 424, and tome iv. p. 449.

¶ Bull. de la Soc. Anat., 1848, (quoted by Valleix.)

"In each case there was an apoplectic spot, of greater or less extent, containing a half-liquid blood, and a kind of red, pulpy substance." This corresponds essentially with Choulant and Richter's account of the same lesion.*

It differed again from the appearances presented in abscess of the spleen, for "pyæmic abscesses (metastatic) form a single, circumscribed, peculiar deposit, which goes wedgelike from the circumference toward the centre; it is at first blackish-red, then yellowish, but with dark margins, and finally purulent."† Or, again, the spleen may be found "of a tawny color, soft, friable, presenting either traces of purulent infiltration, or scattered depots of pus, or a voluminous abscess."‡

It remains, in conclusion, to consider changes of color, particularly green coloration. "Green coloration of the tissues," observes Vogel,§ "is but rarely met with. It is sometimes observed in the lungs, the intestinal canal, and the muscles." Most of these tints depend upon changes in the body after death; some, he thinks, may be owing to the presence of sulphuret of iron, while others result from effects of putrefaction, unknown to us. He hazards the conjecture that many of these changes are owing to bile-pigment permeating the walls of the gall-bladder, and spreading, by imbibition, into the surrounding parts. "Further investigations must determine whether this kind of coloration of the dead body is seen in man at any distance from, or whether it is confined to, the immediate neighborhood of the gall-bladder."

In the case cited by Vogel, the discoloration was pretty general, and extended into the parts adjoining the gall-bladder. But in the case before the Society the change in color was small in extent, local, circumscribed, and at a comparative distance from the gall-bladder.

The intense general hue of inflammation of the organ, the line of demarcation, with its superincumbent vesicles, the peculiar fetid odor, and the character of the mass contained in the spleen, forbid us then to confound it with any of the above conditions.

Cancer of the Great Omentum, Pyloric Extremity of the Stomach and the Small Intestines, with Fibrous Tumors of the Uterus.—DR. DARRACH presented these specimens, which were removed by Dr. Barlow Darrach, at an autopsy upon a patient of Dr. Fricke, of this city. The patient was a female, of German extraction, married, and had had one child, a daughter. She was a tall, gaunt person, forty-eight years of age, and of a nervous temperament. For the last fourteen years, at least, she has not been known to have had any *severe* sickness. She had always suffered from a dry, parchment-like state of the skin on the arms and lower limbs; and has also had frequently slight attacks of dyspepsia, accompanied with eructations of wind and loss of appetite, which always yielded readily to some mild remedies, such as an aperient pill, etc. She was a hard-working woman, having for many years been a cook in a large eating establishment.

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* Choulant and Richter, Path. und Ther., p. 970.

† Choulant, p. 970.

‡ Valleix, Guide du Médecin Practicien, tome iii. p. 275.

§ Path. Anat. Human Body; Phil. 1847, p. 360.

The sickness, which terminated in her death, commenced in July last. She then complained of great pain in her back, and shortly afterwards she had numerous and large alvine discharges, accompanied by tenesmus. Her stools were changeable in appearance; sometimes mucoid, at other times presenting well-formed discharges. In the latter part of her affection, the intestines were constantly distended with gas, so much so as to prevent a satisfactory examination of the abdominal viscera. She still suffered much from eructations of wind, and a diffused pain over the abdomen.

The above symptoms gradually augmented throughout July and August, the pain becoming the prominent symptom. A very severe attack of palpitation of the heart occurred at the end of the month of August. Dr. Fricke thought this to be owing to the action of quinine, which she was then taking. This palpitation was so alarming that the woman was thought to be dying; but relief was obtained after the administration of valerian. Now followed great insomnolency and constant vomiting for two weeks, which was considered to be owing to some obstruction in the bowels. The tongue was natural; the patient had no cachectic appearance.

Autopsy.—The abdominal cavity alone was examined. The liver was healthy; the stomach was thickened at the pyloric end, which thickening, from microscopical examination, was proved to be cancerous; no cancerous elements could be discovered, however, in the other parts of the thickened walls of the organ; from which it was inferred that the thickening, except at the pyloric end, was owing to hypertrophy. The great omentum was also thickened and contracted from cancerous deposit, which was undergoing oily degeneration; the small intestines, for the distance of about one or two feet from the ileo-cæcal valve, were thickened and contracted by a deposit which had all the characters of cancer. Beneath their peritoneal investment were numerous small circumscribed deposits, resembling the deposits of tubercles, but which were found to consist of cancerous elements. The kidneys were healthy; the uterus had four fibrous tumors growing from its fundus, the largest one, being about the size of a large walnut, had undergone peripherally calcareous degeneration; the appendages of this organ were healthy.

Cancer of the Liver and Supra-renal Capsules; no Bronzing of the Skin.—DR. DA COSTA presented, for Dr. Wm. King, a cancerous liver of enormous size:—Frederick Harkin, aged thirty-five, a native of Ireland, and a farmer by profession, was admitted into the St. Joseph's Hospital on the 19th of August, 1858, suffering with an abdominal tumor, extending from the right to the left hypochondriac region, and downward some inches below the umbilicus; it was hard, knotty, and immovable. The tumor had been noticed by the patient, for the first time, about three months previous to his admission. Upon making inquiries as to its first appearance, he persisted in stating that it came on suddenly after drinking a quantity of water; while his wife, with about equal accuracy, attributed it to a stroke of lightning. The symptoms, during the whole course of the disease, were not well marked, and it was impossible, with any certainty, to form a diagnosis. At the Pennsylvania Hospital, where the patient had been under treatment for a month, no positive opinion as to the nature of the affection had been given. At the St. Joseph's Hospital, his attending physicians, Drs. Keating and Keller, came to no definite conclusion as to the true character of his disease.

Vomiting was one of the most prominent symptoms; it was generally induced by a full meal; the matter ejected consisted, first, of the food he had taken, and afterwards, of a glairy mucus. The liver appeared to perform its functions up to the time of his death; no symptoms of jaundice appeared; the bowels were regular, and the stools bilious; the patient felt no pain in any portion of the chest or abdomen; nor did pressure occasion any. Debility was one of the most distressing symptoms of which he complained; although not confined to his bed while under treatment, he expressed little desire to be moving about. Emaciation was present in a slight degree, but the peculiar cachectic condition of the system, common to cancer, was entirely absent; the color of the skin was natural. From the 19th of August up to the time of his death, which occurred on the morning of the 24th of September, he suffered only from debility, the weight of the tumor, and vomiting after meals. On being asked by the attending physician, a few days before his death, if he was improving, he expressed the opinion that the tumor was much lighter.

On the evening of the 23d he passed a good night. At about four o'clock on the following morning he arose from his bed, but became suddenly so weak that he had to be assisted back by the nurse. After having been placed in bed, he vomited, at first water, and afterwards mucus; the vomiting was succeeded in a short time by insensibility; the pulse was frequent, but small; the breathing labored, and the face of a livid hue. In this condition he remained until twelve o'clock, when he died.

Autopsy.—Six hours after death an examination was made, which revealed the following conditions of the viscera:—The liver formed in the abdomen a large tumor, weighing twelve pounds, which occupied the right hypochondrium, the epigastrium, and the left hypochondrium, and descended some inches below the umbilicus; its anterior and posterior surfaces were covered with a number of whitish indurated masses, evidently cancerous; these deposits were more numerous on the left lobe and on the edges; the liver measured thirteen inches in length, twelve inches in breadth, and four inches in thickness through the centre; the gall-bladder was distended with bile. The stomach was much displaced, but in a healthy condition; the pyloric extremity rested on the spleen, this organ being much increased in size, and of a dark color; the transverse colon was situated at the lower portion of the abdomen, as far down as the hypogastric region; very little omentum remained; the pressure of this immense liver no doubt had produced its absorption. On examining the mesentery, the glands were found much enlarged, and of a bright-red color; the remaining abdominal viscera were in a healthy condition; the epigastric and internal mammary veins were much enlarged, but there had not been the slightest effusion into the peritoneal cavity. On examining the thorax, the lungs were found to contain deposits, probably cancerous. The heart was natural; no lesion was found which could account for the sudden death. It is, indeed, a remarkable circumstance in this case, that, notwithstanding the cancerous disease of the liver, no pain was felt, nor were the functions of that organ interfered with. The supra-renal capsules were both diseased, and infiltrated with cancer.

Dr. Keating, who had attended the patient for some time, stated that the extent of the swelling in the abdomen had almost precluded the idea of an affection of the liver. The appetite of the man was enormous; the stools were solid, and of natural color and appearance. There was not the slightest trace of bronzing of the skin; even the peculiar hue of the countenance, met with in cancer, was absent. The supra-renal capsules were microscopically examined, and presented undoubted evidences of cancer. The patient had employed iodine friction over the abdomen, which he thought had reduced the size of the organ.

Dr. Mitchell spoke of the frequent absence of the peculiar color in cases of cancer, and suggested that there might be, as it were, two sets of cases, one with and one without this symptom.

Dr. Addinell Hewson was now attending a patient in whom he had diagnosed cancer of the liver, and whose complexion did not in any way indicate cancer.

WEDNESDAY EVENING, October 27th, 1858.

The President, DR. LA ROCHE, in the Chair.

Cancer of the Liver.—DR. ADDINELL HEWSON exhibited specimens removed from the body of Mrs. C., to whose case he had alluded at the previous meeting. He had visited Mrs. C. for the first time on the 1st of October, and found her in bed, exceedingly pale, weak, and emaciated, and was informed by her daughter that she had been suffering from diarrhœa for about four months, and that very recently the alvine evacuations had become bloody, and caused them alarm. She had rejected all nourishment from her stomach during the whole of her illness. Her tongue was very smooth and pale; the lungs and heart, on examination, were found normal; the pulse feeble and frequent, 140. On passing the hand beneath the bedclothing and over the abdomen, he was surprised to find this region tumid and bossilated, as though the intestines were distended by hard, scibulous masses of fæces; this hard, bossilated condition extended from beneath the ribs all across the abdomen, and below the umbilicus into the lower regions of the abdomen; the edge of this hardness was very nodular, and, by pressing on the attenuated integuments of the abdomen, the fingers could be passed under this border; the lower part of the abdomen was dull; this was especially marked in the right illiac fossa. The patient complained of no pain in the region of the tumor; she suffered occasional colicky pains when at stool; the alvine evacuations were about four per diem, thin, but not deficient in bile; the tinging with blood was found to proceed from hemorrhoids. The patient had never observed the tumor of the abdomen before the date of her present illness; she was fifty-eight years of age; had always been thin and pale; her parents lived to an advanced age; she did not know of either of them having died of cancer; she had lost two sisters with phthisis; she was a widow; had had two children, the younger about twelve years old. Her health had been failing ever since her change of life, (at fifty-two years of age,) at which time she lost her husband; since then she had been much reduced in circumstances; she had never had any uterine discharge, or trouble with her kidneys. She rallied somewhat under the use of stimulants, but died fifteen days after she was first seen by Dr. Hewson.

Autopsy twenty-two hours after death.—Rrigor mortis well-marked; slight straw tint of surface; emaciation extreme. Abdomen—enormously distended; a hard, knobby tumor could be readily felt through the walls occupying the right hypochondriac and lumbar, the epigastric, and part of the umbilical, and the left hypochondriac regions; on making the section of the walls much gas escaped, and about three quarts of fluid were found in the cavity of the peritoneum; the tumor was found to be of the liver, which was bound by old adhesions to the walls of the abdomen on the right; the organ itself was greatly enlarged, extending up under the ribs as high as the fourth rib; its surface was studded with cancerous masses, and similar masses were distributed through its structure; the portions unoccupied by them were in a state of fatty degeneration; the organ weighed, when removed, nine and a half pounds; the gall-bladder was much distended with bile; the stomach had been pushed over by the liver into the left side, and made to occupy an almost vertical position in the left hypochondriac and lumbar regions; it was healthy as to structure. Under the liver, in the right side, was found the colon, doubled on itself at the angle of the ascending and transverse portions, bound down by adhesions, so as to nearly obliterate the canal, and in the centre of these adhesions was found a depot of about a drachm of thick, greenish pus, with the walls of the gut so much attenuated that they gave way at one point; the alimentary canal, beyond this, was healthy; in the vicinity of this the peritoneum was studded with hard masses of the size of a pea; the same were found in the right broad ligament, which was bound to the cæcum; and under these, in the iliac fossa, another collection of pus, of about a drachm in quantity; uterus and ovaries were free from disease, and both kidneys were in a healthy state, although unusually pale. Thorax—there was about an ounce of fluid in the pericardium; the heart was healthy; the lungs appeared natural; they were œdematous and frothy, and at the apex of the right lung there was a little hard mass of the size of a shot; nothing could be found in this to indicate cancer; the masses in the liver were observed, on a microscopic examination, to be cancerous.

Ossification of the Splenic Artery.—The preparation exhibited to the Society by DR. HALL was removed from a man, aged seventy-eight, who died of phthisis, in the Pennsylvania Hospital. He had been a sailor all his life, of drinking habits, and was utterly broken down in constitution. He was over a year in the House, and at the time of his death was little more than skin and bone.

Prior to his death it was evident that the right brachial, with its branches, were ossified—this could be felt at once on passing the fingers over the course of the branches.

At a post-mortem inspection, the aorta, at and just below the curve, was found studded thickly with osseous scales. The brachial artery of the right side also contained calcareous patches, while the radial and ulnar arteries were in parts quite rigid with the new formation. (These preparations were shown to the Society.)

The splenic artery was ossified throughout its course; a lesion which is rare. Dr. Bristowe,* of St. Thomas's Hospital, reports a case of "A female, aged sixty-seven, dead from dry gangrene of the foot. The arteries of the thigh and leg were ossified. The splenic artery was ossified throughout. The spleen small and natural."

Morgagni, also, quotes the case of an old man, in whom "the aorta at its bifurcation was ossified, and the splenic artery, from its commencement to its entrance into the spleen, was considerably dilated, and consisted almost wholly of bone."

DR. PACKARD alluded to the fact that the term ossification was very vaguely used; true bone being among the rarest of pathological formations.

DR. GROSS did not agree with Dr. Hall that ossification of the splenic artery was a very unusual occurrence. He had met with it not unfrequently, more often in the male than in the female. In the male, indeed, all arteries are more frequently ossified, a fact which he had had opportunity of observing himself, and which, on inquiry, he had found borne out by several pathological anatomists in this country with whom he had corresponded on this subject. Dr. Gross then exhibited a specimen, of a stellate appearance, which he believed to be true ossification of the valves of the aorta of an ox.

Examination of Black Vomit.—DR. PACKARD read the following:—During the past summer I have had two opportunities of making microscopical examinations of specimens of black vomit.

One of these was given to me by Dr. La Roche, immediately after its ejection. Examined under a magnifying power of 360 diameters, were seen—

1. Epithelial cells of the squamous variety.
2. Bodies resembling epithelial cells in various states of distension, some apparently filled with coloring matter of different shades, from light yellow to black. A few of these were perfectly opake; many of the rest were highly refractive.
3. Some brownish-yellow, nucleated cells, about twice the size of lymph-corpuscles.
4. Some very small reddish cells which may, perhaps, have been altered blood-corpuscles.
5. Many fine granules.
6. A few quite minute oil globules.

In one of the portions examined there were several masses of what seemed to be partly digested food.

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* A Treatise on the Structure and Use of the Spleen. By Edward Crisp, M.D.; London, 1854, p. 150.

The other specimen was taken from the stomach of a sailor who died, with all the signs of yellow fever, in the Pennsylvania Hospital. The power employed was 472 diameters.

1. Epithelial cells in vast numbers, arranged in masses. Very few of them were squamous; the immense majority were columnar, and ranged side by side.
2. A great many fat globules, of all sizes.
3. Free nuclei.

The liver of this patient was very decidedly fatty, both in its grosser characters and under the microscope.

The same degeneration was very marked in the liver of another patient in whose case a similar diagnosis had been made.

Dr. S. Henry Dickson inquired whether any of the members had met with the ruptured capillaries which are described by Blair as present in black vomit. In examination of black vomit made at Charleston none were detected.

Dr. La Roche, and several other members of the Society, stated that they had never met with them.

Fatty Degeneration of a Nerve, in a Case of Tetanus.—Dr. Packard continued: I have also made an examination which may have some interest, as perhaps bearing upon the pathology of that very formidable disease, tetanus; not explaining it, but possibly giving a ray of light in regard to it in this particular case.

The patient was a man in whom, after an amputation of the forearm, sloughing of the stump had occurred, and subsequently tetanus. By the sloughing was laid bare a portion of the ulnar nerve, which was excised by Dr. Pancoast with a faint hope of arresting the symptoms. A portion of the excised bit of nerve seemed to the naked eye to be healthy, the rest was abnormally vascular.

The former, under the microscope, was proved to be actually in a normal state; the latter was throughout in a condition of well-marked fatty degeneration. Repeated examinations of various specimens placed the fact of this difference of state beyond a doubt.

It would be absurd to infer from this single fact that tetanus is always connected with local inflammation somewhere in the nervous system, for the degeneration was here probably an inflammatory change; but the only way to arrive at the pathology of so rare a disease is to carefully preserve every item of information, and it is only as such an item that I present this isolated observation.

Dr. Hewson stated some facts in relation to this case of tetanus, which he thought important in connection with Dr. Packard's remarks. The amputation had been performed by himself on the case, in the Pennsylvania Hospital, for a severe gunshot wound, which had caused extensive comminution of the bones of the forearm, and burning of the integuments of the arm. The amputation was of the circular form, and was performed about two and one-half inches below the elbow, the patient being placed under the influence of ether. Excessive inflammatory reaction ensued in the burnt surface, and a gangrenous slough followed, which not only involved the cuff of the stump, but the integuments of the arm considerably beyond the limits of the original burn. It was on the separation of this slough that the tetanus set in.

The portion of nerve removed by Dr. Pancoast lay partly in a pouch formed by an accumulation of pus beneath the integument, between the internal condyle and olecranon, and partly in sound tissue above. The latter was what Dr. Packard has mentioned as normal, while the former was what he has described as in a state of fatty degeneration. The patient lived some time (about ten days) after the operation, but did not seem to have been benefited by it.

Ulceration of the Larynx and Trachea; Death from Œdema of the Glottis.—DR. HALL presented, for Dr. Albert H. Smith, a larynx and trachea removed from Bridget Nolan, aged fifty, native of Ireland, a housekeeper, who entered the Pennsylvania Hospital October 18th, 1858. She stated at the time that she had had a cough for two years, having been attacked first with croup, of which she had had several attacks since. When admitted she was apparently in fine health, stout and ruddy; the only evidence of disease being an occasional stridulous inspiration. On examination of the chest, slight sonorous and mucous rales, with a whistling sound in the trachea, were found. After admission, she was observed to have a stridulous cough, coming on in paroxysms, and lasting several hours at a time, with violent dyspnœa. These symptoms continued without change until about two weeks ago, when she was attacked suddenly at midnight with suffocation, and, before she could be reached, was dead.

Autopsy.—The larynx was found completely closed, with an œdematous swelling of the glottis, both above and below which the course of the larynx and trachea was blocked up with tenacious mucus. From the glottis to the bifurcation of the trachea, principally upon the posterior wall, were numerous large, deep ulcerations, with indurated edges.

There was no reason to suspect any syphilitic taint, there being no evidence of it in any part of the body; the vagina, uterus, ovaries, and other organs, were carefully examined, and found healthy. She was a married woman, with a very respectable family of children.

DR. GROSS nevertheless inclined to the belief that the ulcerations were of a syphilitic nature, partly because there was no evidence of tubercle, which might account for the ulcerations, and partly because they were multiple and presented raised and indurated edges.

Rupture of the Spleen; Collapse of the Lung.—The Secretary presented, for Dr. J. C. Harlan, a ruptured spleen, removed from William Gordan, aged eleven, who was admitted into the St. Joseph's Hospital early on the morning of October 15th, suffering from injuries inflicted by a recent accident. While playing in the street he was knocked down and ran over by a butcher's wagon, one wheel of which, he stated, passed over his abdomen and another over his chest. He complained of some pain in the lower part of the abdomen, just above the pubes, but suffered mostly from pain in the chest and difficulty of respiration. His stomach was very irritable, and could not be made to retain anything without great difficulty. A great swelling of the face and neck was obvious at the first glance, and on further examination was found to extend over the chest and abdomen, and to be evidently caused by an enormous effusion of air. No other injury could be discovered, and he expressed himself free from pain in the other parts of the body.

It was supposed that a rib had been fractured, and that the emphysema was due to a wound of the lung by a sharp point of the broken bone. The chest was not minutely examined, as the great pain and prostration forbade it, and indeed the emphysema was so extensive as to render anything like an accurate and satisfactory examination impossible.

Stimulants and opiates were administered, a sinapism applied over the epigastrium, and a bandage placed around the chest. The bandage gave great relief at first, but was afterwards removed, as the boy thought it increased the oppression. He reacted pretty well, and in the afternoon breathed rather more freely and suffered less. He slept at intervals during the early part of the night, but about one o'clock he was seized with a pain across the upper part of the abdomen, so violent as to cause him to scream aloud. It was relieved by large doses of opium and a warm mush poultice applied over the part, and he slept pretty well until morning. During the night a scrotal hernia was observed, which, it may be confidently stated, did not exist at the time of his admission, as the pain above the pubes led to a careful examination. It was probably a result of the continued pressure of the air effused into the abdominal parietes. It was reducible, but returned immediately when unsupported. The next day the pain in the abdomen continued, and was rendered supportable only by the administration of opium, and the constant application of warmth and moisture by the poultice. Toward evening he became delirious, and died between two and three in the morning of the third day after the accident.

Post-mortem examination.—The left lung was in a perfectly healthy condition. The right was completely collapsed and congested, but not wounded, and there was no fracture of the ribs, sternum, or clavicle, nor injury of the bronchi or trachea. The apex of the lung had been confined by an old pleuritic adhesion, which it seemed as if the sudden and violent pressure upon the chest had broken loose. The pleura itself was torn. In the abdomen there were no signs of general peritonitis. The small intestines, liver, and right kidney, were perfectly healthy. There was an effusion of blood in the left hypochondrium. The spleen was ruptured, and the left kidney, transverse colon, and pyloric extremity of the stomach were in a condition bordering on gangrene. As he passed clear urine, it must have been secreted entirely by the right kidney. The liver, though not injured, is worthy of inspection. The curious fissures sometimes observed in it exist here in unusual number. There are also a number of marks that have the appearance of cicatrices, and in one instance a small fissure may be seen at the end of a cicatrix, as though the remains of a large one partially closed.

A discussion arose as to the mode of accounting for the emphysema and the collapse of the lung, since no external injury of the chest had been found. On motion, the case was referred to Dr. Wm. Keller, to obtain additional particulars.

Case of Gangrene, Probably from Arterial Obstruction.—The following case, recorded by DR. HENRY HARTSHORNE, was presented through the Secretary: In October, 1857, I was called to see, with Drs. Halsey and Hazzard, a man of about forty-five years of age, of previously good health except asthmatic attacks, suffering, at the time of our visit, with gangrene of the left foot.

The history of the case was, briefly, as follows: While walking in the street, he was suddenly attacked with intense pain at the upper part of the thigh, somewhat deeply seated. This continued for many hours, obliging him to retire to bed. Within twenty-four hours from the time of the commencement of the pain, a marked coldness was perceptible in the limb affected. This increased gradually, with equally gradual diminution of sensibility in the foot, and, in three or four days, change of color, commencing in the toes and spreading slowly up to the ankle. No evidence whatever of erysipelatous or other form of inflammation in the foot existed. The temperature, sensibility, and appearance of the other limb were entirely natural. I saw him on the fourteenth day of the illness, and his death took place on the seventeenth.

The symptoms, at the time of our visit, were those of constitutional irritation, and moderate but increasing prostration, with blackness of the whole foot and part of the ankle, and total insensibility of the foot. The most striking feature of the case, however, was the alteration in the arterial circulation of the limb affected. As was repeatedly ascertained upon careful examination by Drs. Halsey, Hazzard, and myself, the pulsation of the popliteal and femoral artery (that of the tibial arteries being imperceptible) was not only, as might be anticipated, feebler, but very decidedly and constantly *slower* than that of the corresponding vessel in the other limb. Its rate was, in fact, about *half* that of the other.

The death of the patient took place rather suddenly, with symptoms parallel to those of the attacks to which he had been subject, and which were described as asthmatic. No autopsy was allowed.

Having had the opportunity to make but one visit to him, my attention was not, at the time, called to the condition of his heart, otherwise some ground might be afforded for accepting or rejecting the only hypothesis which suggests itself to me to account for the occurrence and course of the case. This hypothesis is, that the so-called asthmatic symptoms were those of dyspnœa from cardiac disease; that, possibly, during a subacute exacerbation of endocarditis, a fibrinous mass had escaped into the aorta, and travelled as far as the femoral artery, upon which it acted as a plug. The irritation produced by its presence might account for the pain at the commencement of the attack. The suddenness of the patient's death, moreover, at an earlier period than was to be expected from the depressing influence of the gangrene alone, might, perhaps, have resulted from the consummation of the cardiac disease itself. The age, constitution, and habits of the patient, at all events, along with the train of symptoms, removed the case entirely from the category of senile affections, and as positively did the local conditions prevent the diagnosis of erysipelas gangrenodes. If, therefore, the hypothesis above stated be rejected, what theory of causation can be substituted for it?

WEDNESDAY EVENING, November 10th, 1858.

The President, DR. LA ROCHE, in the Chair.

Idiopathic Gangrene of the Groin.—A case presented by DR. ADDINELL HEWSON.—Dr. H. was called to see the infant of Mrs. D., residing in Hide's Court, on the 21st of October. He found the child a pale, feebly-nourished little thing of nine months, suffering from teething and diarrhœa; the latter had been annoying her, off and on, through the whole of the past summer, when she cut the two lower incisors; the upper incisors were still very deep, but the gums much swollen. She had been under the care of a practicing apothecary during the whole of her sickness. A few days before he saw her for the first time, she had been much disturbed by nausea and vomiting, and by an increase of the diarrhœa; the discharges on the napkin were very white and thin, quite watery; the abdomen, when she was first examined, was flaccid, soft, and nowhere tender on pressure; she voided her urine freely. The diarrhœa and sickness yielded readily to treatment; the former had nearly ceased at the end of the third day from the Doctor's first visiting her, when the mother noticed, in putting her to bed in the evening, that she was very fretful, flinching and crying, as from acute pain, when the right hip-joint was moved. On examining the groin of this side, she also observed a livid tumefaction, which she was confident was not there in the morning when she dressed her; this lividity extended from the anterior superior spine of the ilium along the groin to the vulva. On the following day it had much increased, and the child seemed in great pain, feverish, but much exhausted; there was hardness and heat of surface extending up to the umbilicus, and the centre of the morbid action was dark-brown, this color extending the whole length of the groin, and for a width of half an inch; there was no fluctuation, and the sensibility of the brown surface seemed to be diminished. The color here became rapidly darker, and in the course of four days the part was black, soft, and had begun to be separated from the surrounding structures, a considerable quantity of grumous blood escaping from beneath the slough. The child sank under the process of separation of the slough, and died on the 2d of November, so quietly in her mother's arms, that she was not aware of her dissolution at the time.

Autopsy, made thirty-two hours after death.—The destruction of tissue had extended through the subcutaneous cellular tissue, and the contrast of the marble-whiteness of the child's body with the black sphacelated parts was very striking; there was no incarcerated hernia or other local source found that could account for the disease. A dissection of the vessels in the groin was not permitted, an examination of the viscera of the abdomen being all that could be obtained; here everything was found in a healthy state.

DR. WOODWARD said that he remembered a case similar, in some respects, to that of Dr. Hewson. It occurred in Blockley Hospital when he was an Assistant-Resident in that institution. Measles had been endemic in the Children's Asylum, and many of the little patients subsequently suffered from severe bronchitis or pneumonia; after which a number of cases of *gangrena oris* made their appearance, all of which, so far as he recollected, terminated fatally. While this state of things existed, his attention was called by the nurse to a small, gray, depressed, gangrenous spot in the groin of a little girl, about six or seven years of age, who had apparently recovered completely from her attack of measles. In spite of treatment, this spread rapidly, and she died in forty-eight hours. At the time of her death an extensive moist slough occupied the whole of that groin as well as the mons-veneris and orifice of the vagina. The symptoms prior to her decease were those of extreme depression. A post-mortem examination was made, but, so far as he recollected, there was no marked lesion in any of the abdominal or thoracic viscera.

Constriction of the Pylorus from Hypertrophy of its Fibrous and Muscular Coats.—DR. DA COSTA presented, for Dr. Wm. Moss, a specimen of narrowing of the pylorus, with Dr. Moss's account of the case:—Mrs. M., aged forty, came under my care on the 20th of last September, at which time she had been suffering about five weeks from the following symptoms:—Pain at the pit of the stomach, not increased by pressure; a "dead," heavy sensation throughout the abdomen, and vomiting shortly after meals, the matter vomited consisting of the ingesta only, containing neither bile, glairy fluid, nor blood. For some months she had been subject to attacks of indigestion, and had been steadily losing flesh and strength; she complained especially of great weakness in her legs; her eyes were sunken and unnaturally brilliant, and the expression of her countenance was utterly despondent; she had a slight cough; her bowels were obstinately constipated; the tongue smooth and red; pulse 100, feeble and irregular. On physical examination, I found slight dullness at the apices of the lungs; heart's size and action natural; liver not enlarged; no signs of aortal aneurism, or of tumor in the abdomen, except the slightest possible resistance to the finger over the pylorus, unaccompanied by dullness on percussion; urine of healthy specific gravity and constituents; no pain on pressure over the spinal column.

The diagnosis arrived at by Dr. Da Costa and myself, more by exclusion than from any distinctive symptoms which the case presented, was, that there existed an obstruction at the pyloric orifice, not caused by cancer nor the result of ulcer at the pylorus. That the lesion was not an ulcer of the stomach, was clearly shown by the dull, heavy character of the pain, its diffusion over the abdomen, its not being increased by pressure, and the absence of blood in the matter vomited; while the non-existence of the symptoms of ulcer in the previous history of the case tended to prove that it was not likely that a cicatrix from a former ulcer could be the cause of the malady.

We inferred that cancer was not present, because, in the state of exhaustion to which the patient was reduced, we would have had, in addition to the actual symptoms, vomiting of glairy mucus and of the characteristic coffee-ground fluid of cancer, and, in all probability, the presence of a tumor perceptible to the touch.

As to what was the real cause of the obstruction, in the absence of all positive symptoms, we could only hazard a supposition. It might have been owing to a tumor pressing against the pylorus from behind; and since the pancreas was the only one of the neighboring organs of whose normal size we were not certain, it seemed not improbable, that the enlargement might be of that organ. Yet this was a mere supposition. It would have, to some extent, accounted for the numbness of the thighs, by pressure on the nerves; but the absence of any signs of a tumor invalidated it.

The history of the case may be recounted in very few words. The vomiting after meals was an almost incessant symptom, ceasing once only, on the 23d of September, without apparent cause, since it recommenced a couple of days afterwards under the use of the agent which I flattered myself was controlling it, hydrocyanic acid, to end only with the life of the sufferer. I was equally unsuccessful in combating it with creosote, bismuth, and the opiates.

On the 29th she was seized with severe lancinating pains under both patellæ, unaffected by pressure or motion, and accompanied by pricking sensations and numbness in the legs, with great difficulty in moving them. The pains gradually ceased, together with the pricking, but the loss of motion and numbness increased daily.

October 3d.—Tongue coated; increased pain in epigastrium, and acid eructations, which yielded to the employment of bismuth and sod. bicarb. During all this time the constipation was most obstinate, requiring the daily use of laxative enemata. Her extremities were cold; her pulse was scarcely perceptible, ranging from 110 to 130 beats in the minute, and she could obtain with difficulty a few moments of sleep.

On the 17th I first noticed that her mind occasionally wandered, so slightly and rarely, that perhaps this state may have existed for several days before it attracted my attention. The constantly increasing numbness and weakness of her lower extremities terminated in complete paralysis about a week before her death; the abdominal pains and vomiting increased in severity; she complained of headache and occasional febrile attacks, and during the last few days of her life her pulse became so faint and frequent that I could not count its beats. She retained her mental powers perfectly, with the exception of the occasional above-mentioned aberrations, until the time of her death, which took place on the 26th of October, about ten weeks after I first saw her.

Examination twenty-four hours after death.—Thorax, heart, and pericardium healthy; old adhesions of pleura over tuberculous deposits in apices of both lungs; small cavity in apex of right lung; the pleura and pericardium contained no fluid. Abdomen—adipose tissue of walls about three-quarters of an inch thick; the liver, spleen, pancreas, and urino-genital organs healthy, as were the choledoch and pancreatic ducts; gall-bladder empty; the stomach was collapsed, very slightly, if at all, enlarged, empty, and not thickened; its mucous coat was smooth, clean, not thickened, and presented no signs of congestion or of inflammation; the pyloric orifice was so narrowed that the finger could with difficulty be forced into it, and its mucous lining lay in folds, like the mouth of a bag; there were no traces of ulcers or cicatrices, and the narrowing proved to be due to a thickening of the submucous and muscular coats. The rest of the intestinal canal was healthy; there was about a teaspoonful of jellylike substance lying loose in the stomach near the pylorus, which, under the microscope, consisted of granular matter and a few epithelial cells; it was, I imagine, the thick beef-tea of which she had partaken shortly before her death. Nothing was found to explain the paralysis of the lower extremities, and I was not permitted to examine the brain or spinal cord, to some lesion of the latter of which it must doubtlessly be attributed. On dissection of the pylorus its mucous coat was unaltered, and easily detached from the subjacent coat; the fibrous and muscular coats were uniformly thickened, with none of the characteristics of scirrhus to the eye or touch; examined microscopically, the thickened substance was found to be composed of fibro-areolar tissue, containing formative cells and muscular fibres of organic life.

The absence of cancer-cells under the microscope, the uniformity of the enlargement, its softness to the touch, and the presence of tubercle in the lung, were sufficient evidences that the thickening was due, not to a cancerous deposit, but to hypertrophy of the normal constituents of the part.

The points which occur to me as most worthy of notice in this case, are, the impossibility of diagnosing with certainty a stenosis of the pylorus dependent on hypertrophy of its submucous and muscular coats, and the exceeding rareness of this disease, or rather the rare mention which has hitherto been made of it.

The physical and rational signs of constriction of the pylorus, whether from mere hypertrophy of its coats or from a cancerous thickening in its first stage, that is, before ulceration or erosion of the mucous coat has taken place, and before the tumor has attained sufficient size to be perceptible to the touch, are identical; so that to the difficulty, so dwelt on by all writers on the subject, of diagnosing cancer of the pylorus in its earlier stages, we have superadded the utter impossibility of distinguishing between it and the lesion now under consideration.

As to the infrequency of this lesion, I can find but few writers, even among those who have especially studied the diseases of the alimentary canal, who seem to have suspected its existence. Budd, Chambers, Valleix, Grisolle, and Andral make no mention of it. Rokitansky (*Pathological Anatomy*) simply alludes to hypertrophy of the gastric membranes as one of the causes of stenosis. Habershon describes, what seems to me to be the same affection, a fibroid degeneration of the pylorus, a fibrous deposit commencing in the submucous cellular tissue, obstructing the valve and followed by muscular hypertrophy, with symptoms identical with those of cancerous obstruction.

Of the later writers, Bamberger* enumerates it among the causes of stenosis of the pylorus, carefully pointing out its exceeding infrequency. Hennoch† mentions it in exactly similar terms, and refers to Brandt on Stenosis of the Pylorus, and Dittrich, the latter of whom had met with it in adults and in children under one and a half years of age.

Cruveilhier, (*Anatomie Descriptive*, article ESTOMAC,) so distinctly asserts the existence of this lesion, that I may be excused for translating, in conclusion, the entire paragraph:—

"In the examination of several patients, who, toward the close of their life, had presented all the symptoms of stenosis of the pylorus, I found no other alteration than a very remarkable hypertrophy of the pyloric ring. I cannot decide whether this stenosis were cause or effect of the continual vomiting experienced by the patient; and I scarcely dare assert that these hypertrophies of the pyloric ring have been frequently shown to me as scirrhous stenoses, by persons but little versed in the knowledge of healthy and morbid anatomy."

WEDNESDAY EVENING, November 24th, 1858.

Vice-President, DR. STILLÉ, in the Chair.

Cancer of the Pylorus.—DR. HALL exhibited a specimen of cancer of the pylorus, removed from a patient of Dr. De Benneville of this city. For many years the patient had complained of a soreness and disagreeable dragging sensation in the region of the stomach. For a month or more before his death there was but little acute pain in the stomach, but rather a feeling of soreness after the eructation of food, which followed within an hour of its ingestion.

Post-mortem examination fourteen hours after death.—Rigor mortis not well marked; body extremely emaciated; right arm amputated at shoulder-joint, a good stump, with a firm and not extensive cicatrix. A large, hard tumor in the epigastric region, to be felt readily on palpation through the attenuated abdominal parietes. Head not examined. Lungs and heart perfectly healthy; liver also normal. Spleen—capsule thickened, and opake patches from old inflammation. Kidneys healthy. Stomach—normal as to position in cavity of abdomen and adjoining organs; nodulated masses upon the superior curvature of the organ; contents not unusual; color of membrane natural, save in the pyloric extremity, where there were streaks of bright injection; no mamillation of the membrane; no softening, as evidenced by tearing up of strips; thickness at pyloric extremity seven-tenths of an inch, at cardiac extremity one-fifth of an inch; cardiac opening not constricted. Pylorus open, the index finger could pass freely into it; the mucous membrane puckered at the orifice. Pyloric orifice three-tenths of an inch in diameter. Commencing at the pylorus was a scirrhous mass extending three and a half inches in the long axis of the stomach, and four and seven-tenths inches in the transverse or short diameter of the organ. At its highest point it had an elevation of three and one-tenth inches above the mucous membrane.

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* Uber die Krankheiten des Digestions Apparatus; Virchow's Handbuch.

† Klinik der Unterleibs Krankheiten.

Under the microscope were found well-marked cancerous elements. The surface of the tumor had undergone serpiginous ulceration in spots; its general hue was light yellow, with here and there a yellowish-green shading. The pancreas was healthy.

DR. WOODWARD made a few remarks in connection with the *homologies of cancer*, which he regarded as a malformed new formation of connective tissue, as suggested by Wedl. One of the difficulties to the reception of this doctrine was the supposed absence of forms in embryonic development, approximating to those of cancer. It was stated, however, that in the young connective tissue of fœtal marrow, cells were often observed approximating to the forms usually regarded as diagnostic of cancer. Diversity in shape, large size of nucleus, and vesicular nucleolus being clearly observable; cells with double and even plural nuclei, besides the characteristic many-nucleated marrow cell, are to be seen.

A specimen exhibiting these appearances was shown, from the marrow of the tibia of a fœtus of five and a half months.

Certain conditions present in fœtal marrow will, perhaps, account for the shape assumed by these young connective tissue elements. These conditions are evidently—1. The large quantity of blastema afforded. 2. The modification of shape by mutual pressure. If to these be added a consideration of the stage of the development of the tissue of the embryo, which is that with which cancer is thought homologous, the significance of such forms as these will be at once apparent.

Communication of the Appendix Vermiformis with the Ileum through a mesenteric gland; iron wires in the Omentum.—DR. PACK-

ARD, in presenting these specimens, made the subjoined remarks: William Millbank, aged twenty-seven, a colored seaman, died in the Pennsylvania Hospital, June 26th, 1856, after an illness of about five months. When admitted into the institution, about two months previous to his death, he said that the doctors had told him that his disease had begun with typhoid fever; but his case was then evidently one of phthisis. The notes of its course are omitted as irrelevant.

Autopsy, fifteen hours after death.—Body excessively emaciated. Rigor mortis not very well pronounced. Brain softened; much serous effusion. Some tuberculous deposits existed around the optic chiasm, obliterating the fissure of Sylvius on each side. Lungs much congested throughout, exuding bloody or frothy serum on being cut into or torn; both apices healthy. The left lung was the one most diseased; the lower half of its bulk was converted into a yellow tuberculous mass, presenting several small anfractuous cavities, chiefly at its posterior part; just above this mass was some miliary deposit, of no great extent. In the right lung the middle lobe, and the lower portion of the upper, presented similar yellow masses; the lower lobe contained a great deal of miliary tubercle. Heart, liver, spleen, and kidneys, healthy. Intestines—in the ileum three of the agminated glands, of small size, were found ulcerated, and many others had an appearance as of cicatrization. The mesenteric glands were enlarged, especially about the ileo-colic junction; one of them had suppurated, and communicated with the interior of the caput coli, an ulcer existing in the mucous membrane; there were several other ulcers around the spot. The appendix vermiformis was adherent to the mesentery from inflammation; a perforating ulcer existed at its extremity; an ulcer in the ileum, about one inch above the ileo-colic junction, had also perforated the intestine, and both these ulcers penetrated into the cavity of a large, suppurated mesenteric gland. Whether or not this cavity had communicated with that of the abdomen, could not be determined. In the tissue of the great omentum, between its layers, were found two bits of rusty and crooked iron wire, two and one-half and one and one-half inches long. How these foreign bodies were introduced I cannot pretend to say, unless the patient had swallowed them at some period of his life.

I would call attention to the seat of the tuberculous deposit in the lungs in this case, and would inquire whether the fact of enteric fever, with its accompanying bronchitis, having been the exciting cause, may not have had some influence in this respect? Is there any tendency observable to the formation of tubercle, after enteric fever, about the inflamed tubes, rather than at the apex of the lung?

Another point of interest about this case is the discharge of the pus from an inflamed mesenteric gland into the caput coli. Did the ulceration of the mucous membrane occur independently, or did the gland burst at that point as a bubo would perforate the skin?

The communication of the appendix vermiformis with the ileum through the cavity of a suppurated mesenteric gland, although very easy of comprehension, is not of frequent occurrence, so far as I can ascertain. Whether this had anything at all to do with the passage of the wires into the abdominal cavity or not, is to my mind very doubtful.

Dr. Keller reported that he had made inquiry about the case of rupture of the spleen, and collapse of the lung, read at a previous meeting of the Society, and that he had been positively assured that the most careful examination failed to detect a fracture of the ribs.

Dr. Stillé suggested, that the laceration of the internal parts, unaccompanied by fracture of the ribs, might be explained by the elasticity of the thoracic walls, which in a child would readily yield, and this when the same force was sufficient to lacerate the resisting textures underneath.

Dr. Mitchell spoke of the evident effect which the abdominal walls and the intestines must exert in preventing ruptures of the internal organs during injuries received. They act, as it were, as air-cushions. Dr. Mitchell then related the particulars of a case of rupture of the liver. The patient, a bricklayer, fell from a considerable height and alighted on his feet. The shock was such that it tore the liver from its attachment, which was the more easily possible because the abdominal walls had been thinned, by a coarse truss, which was worn for the relief of a hernia. Thus the proper support of the abdominal viscera was wanting.

American Progress of Medical Science.

REPORT ON THE DISEASES OF CHILDREN.

By D. Francis Condie, M.D.

Cerebro-spinal Meningitis.—There would appear to be a propriety in including this affection among the diseases of children, from the fact that, in a very large proportion of the cases which occur, whether in the endemic or sporadic form of the disease, its subjects are children at or under the age of puberty.

During the two past years the disease appears to have prevailed very extensively as an epidemic in different portions of the United States, but more especially in the northwestern portions of the State of New York.

Description of the Disease.—The following is the description of the disease, as given by Dr. J. V. Kendall, of Clay, Onondaga County, New York, (*Trans. Med. Society of the State of New York for the year* 1858,) derived from personal observations made by him during an epidemic of cerebro-spinal meningitis, which occurred in his vicinity during the winter of 1857.

There were in a large number of cases premonitory symptoms of some hours' duration, a sense of languor and restlessness, but often scarcely to an extent to attract attention. These premonitory symptoms were succeeded by a chill, not severe, but of several hours' duration, and accompanied or followed by violent pain of the head, usually described by the patient as extending completely through the head from temple to occiputs. A violent pain also generally extended down the neck, or the whole length of the spine, in some cases even over the entire surface of the body. After a time, perhaps some hours from the onset of pain in the head, retching and vomiting set in, and in many cases were frequent and distressing, but in others they were only of occasional occurrence.

After a short period, commonly from twelve to forty-eight hours, the foregoing symptoms abate, the patients feel easier, and there is frequently a softening of the surface, and a general state of improvement, as though the fever had ceased and a speedy convalescence was about to occur. And such was the case in many instances, but, in the majority, there speedily ensued a state of disease to be described hereafter.

In conjunction with the pain in the head, vomiting, etc., there was usually considerable mental disturbance. Occasionally the patients exhibited merely slight confusion of intellect, talking, perhaps, at random, but answering rationally questions put to them, but with apparent effort, and only in monosyllables. Other patients were wildly excited, raving and talking, and tossing about upon the bed, so as to require the aid, sometimes, of one or more assistants to restrain them. Others, again, would lie in a torpid state, with their head drawn backward upon the spine, giving no reply to questions addressed to them; apparently either not hearing or understanding them; while others, again, would manifest a vague comprehension of the questions put, or directions given to them, but seemingly without mental or physical strength to answer or comply. In these latter cases the eyes are closed, or if opened, have a dim, unmeaning look. In nearly all the cases the pupil was moderately dilated,—in a few, however, it was slightly contracted, or of its natural size.

As early sometimes as the second day, but later in the milder cases, petechiæ made their appearance, first on the face, neck, and breast, and extending, more or less, over the entire surface, varying in size from a mere point to several lines in diameter, and in color, from a scarlet to a dark purple, almost black. In some cases the petechiæ were few in number and scattered, in others they covered one-fourth of the entire surface of the body. In the first case, being most generally of a scarlet or rose color, and in the latter, larger in size and of a darker hue. In favorable cases the petechiæ remained but a few days, gradually fading, and, in a week, disappearing. If the patient continued to sink, the petechiæ remained, and grew constantly darker until death. In a majority, probably, of the cases, no petechiæ could be detected by the eye,—in even some of the fatal cases they were absent.

The secretion of urine is moderate in quantity; it is apt to accumulate in the bladder, and to require the catheter for its evacuation. It is commonly dark colored, and muddy, letting fall a thick sediment after standing awhile; sometimes it is as dark as brandy, and without sediment. In the course of the disease it may become clear and of a lighter color, and again, after a few days, assume a muddy appearance.

The bowels are remarkably torpid, resisting the action of large doses of active purgatives.

In the early stage of the disease the tongue was coated with a thin whitish, or a thicker yellowish fur. It was sometimes red and dry—more generally moist. In the advanced stage it is occasionally dry, but more often moist and red. In many cases it would remain for many days moist and apparently healthy.

In cases which continue beyond the fourth or seventh day, the bowels continue torpid. In a very few cases, however, a slight diarrhœa occurred.

There was present a peculiarity of pulse which is more easily recognized by the touch than described. In the more violent cases, soon after the attack, the pulse was feeble, fluttering, easily compressed, often intermittent, and generally very frequent. The intermission of the pulse was most decided in cases attended with a slow pulse—from thirty-two to fifty in the minute. As a general rule the pulse was frequent throughout every stage of the disease—being seldom less than one hundred in the minute, and occasionally running up to a number scarcely to be counted. It varied much, however, from day to day, without any perceptible cause.

As in the commencement of the attack, so also in the latter stages of the disease, there was frequent retching, with, occasionally, distressing vomiting; ejecting, first, such substances as have been taken into the stomach, and afterwards its viscid and acid secretions.

DR. T. H. SQUIRE presents, in the same work from which we derive the foregoing, the history of forty-three cases of cerebro-spinal meningitis, with the view to its faithful delineation in the most fatal form under which it prevailed, during the winter and spring of 1857, in Elmira and other villages of Chemung County, New York.

The symptoms, he remarks, were very uniform in all the cases. A chill, headache, vomiting, prostration, morbid sensitiveness of the skin, jactitation, coldness of the surface, wildness of expression, dilated pupils, irregular breathing, paralyzed deglutition, wry neck, retraction of the head, dullness or abolition of the senses, pulse but little affected, bowels quiescent, petechiæ, delirium, convulsions, coma. Many or all of these symptoms are present in every case. The diagnosis is therefore not difficult, especially when the disease is fully established.

Subjects of the Disease.—Of the forty-three cases reported by Dr. Squire, thirty-one were in males, and twelve in females. Seven of the patients were between 1 and 2 years of age, seven between 4 and 5 years, eight between 5 and 10 years, five between 10 and 15 years, five between 15 and 20 years, four between 20 and 25 years, and seven between 30 and 41 years. Thus, the same nearly as in all other epidemics of cerebro-spinal meningitis, children and young persons, especially boys, were by far the most frequent victims of the disease.

Duration.—In regard to the duration of the disease in the forty-three cases recorded by Dr. Squire, 2 terminated in two hours, 2 in four, 3 in six, 1 in seven, 4 in twelve, and 1 in sixteen hours; 5 terminated in one day, 5 in two, 6 in three, 3 in four, 4 in five, 1 in six, 1 in nine, and 1 in ten days; in two cases the disease continued for eight weeks, in one four months, and in one ten months.

Further Description of the Disease.—From a very interesting report on cerebro-spinal meningitis as it occurred epidemically in Churchville, New York, in the latter part of the winter of 1857–58, and in the spring of the latter year, communicated to the *Buffalo Medical Journal* for July, 1858, by Dr. J. W. CRAIG, we copy the following description of the disease.

It seemed to have assumed two distinct forms, namely, a mild and a severe one; or what might, perhaps, have been denominated cerebro-spinal typhus, mitior and gravior.

"The mild cases were ushered in with a chill, more or less severe, followed by fever, pain in the head, extending down the neck and back, and accompanied with a feeling of general uneasiness. This set of symptoms generally continued from eight to twelve hours, when an intermission occurred, more or less complete; but about the same time next day there was a return of the pain and fever, but no chill. The pain and fever continued to occur from one day to another; the patient, during the intermissions, being, in most cases, able to move around the house.

"The more malignant cases were also ushered in with a chill, followed by headache, vomiting, double vision, strabismus, intolerance of light and sound, with deafness and swollen tongue; convulsions in children, and delirium in adults. In some cases the skin presented a mottled appearance, with spots like *taches rouges;* in other cases there were petechiæ, with cold extremities, feeble pulse, and ultimately death. When reaction did take place—which had necessarily to be speedy, as these cases terminated often in from four to twenty-four hours from the accession of the chill, the extremities became warm, the pulse fuller, the delirium less constant, and slight febrile reaction manifested itself. In the most favorable cases of this severer form of the disease, after reaction became fully established, the pain in the neck and head continued; the head was drawn stiffly backward, the same rigidity extending down the whole length of the back, and to such an extent that to raise the lower extremities was to raise the whole body. The morbid sensibility to light and sound continued, as also the dilated pupil and strabismus, and, in many cases, at particular hours, there were convulsions, and a *projectile* vomiting of a green or yellow matter. In addition to the foregoing symptoms, there were, also, great restlessness, jactitation, pain in the stomach and bowels, with anorexia, which continued for a number of days."

A marked peculiarity of many cases of the disease was, the unexpectedly sudden occurrence of the attack, and its terrible severity. The patient may retire to bed apparently in his usual health, and soon after falling asleep be awoke by a chill, and the family aroused by unmistakable symptoms of convulsions. In other cases, after eating a hearty dinner, the patient will be taken with a chill, soon followed by delirium, and this without any premonition whatever. Sometimes a sense of uneasiness was experienced, for twenty-four or forty-eight hours previous to the attack, but in the majority of the severe cases, the prodromic symptoms are so slight as to escape notice.

The delirium in this disease is peculiar; in many cases it had several of the characteristic features of delirium tremens. "In children there is a strong tendency to pulling their hair, biting their lips, fingers, etc., so that they require constant watching to prevent them from injuring themselves. They will also start from their beds suddenly as if fearful of approaching danger."

The Post-mortem Appearances in six cases which proved fatal in less than forty-eight hours from the attack, were as follows:—

"In all of them, on removing the calvarium, there was observed a turgid condition of the venous system. On removing the coverings of the brain, lymph of a yellow and greenish hue was detected in the upper sulci of that organ; and in all there were increased quantities of lymph with sero-purulent effusion at the base of the brain, and extending down the whole length of the spinal cord. The choroid plexus was also very much engorged, and more or less serous effusion in the ventricles. We also found softening of the base of the brain and upper portion of the spinal cord; more marked, however, in some cases than in others."

Two cases, which proved fatal several months after the attack, were examined. Both were of the severe form of the disease; convalescence was very slow. Still the patients seemed to rally, improve in strength, and gain flesh for several weeks, so that they were able to do considerable work. After they had become able to be about the house, they would be attacked every week or ten days with a sense of faintness, headache, and vomiting, which would last for from one to six hours, and then disappear, leaving the patient apparently as well as before their accession. In the forenoon, on one occasion, the patient, a female, had drawn a child, in a hand-wagon, for about a mile; in the course of the day she was attacked with the most formidable symptoms of the disease—dilated pupils, strabismus, double vision, vomiting, headache, intermittent pulse, etc. Every five minutes breathing would seem to become suspended, the patient continuing still perfectly conscious and rational. Death finally occurred, apparently from paralysis of the respiratory muscles. The symptoms of the other case were very nearly the same.

In both cases a post-mortem examination revealed a softened condition of the base of the brain and upper portion of the spinal cord, with a very copious effusion of limpid fluid in the ventricles; amounting in the one case to eight, and in the other to twelve ounces. It should have been mentioned that in both cases there was paralysis of the scalp on the back part of the head, and of the muscles of the back of the neck, with complete numbness.

In 129 cases that fell under the notice of Dr. Craig, twelve only proved fatal. Of these twelve cases, in five death took place within thirty-six hours; in three within seven days; in one not until the fifth week, and in another not until the eighth. In two cases death occurred not until several months from the onset of the disease. The mean duration of the disease was about three weeks.

Continued pain of the head, stiff neck, quick pulse, delirium and coma, were unfavorable symptoms; occasionally by good management, a favorable termination was obtained, under circumstances the most forbidding.

Further Description of the Disease.—In the Report of the Beaver County Medical Society, (*Trans. of the Medical Society of the State of Pennsylvania, New Series, Part II.*, May, 1857,) DR. S. CUNNINGHAM states, that "Epidemic cerebro-spinal meningitis prevailed in the spring of 1848, in a very malignant form. The attacks were mostly sudden. The patient would be seized with violent pain in the head, most severe in the occiput, but frequently felt in the temples, and over one or both eyes; the pupils of the eyes were mostly contracted, but sometimes dilated; great intolerance of light; the brows knit; throbbing of the carotids; severe pain in the back of the neck and along the spine; in many cases violent opisthotonos; during the paroxysm the body would be raised entirely from the bed, the head and heels alone touching; delirium and coma in the advanced stages; obstinate constipation, it being with great difficulty that an evacuation from the bowels could be procured; the functions of the kidneys were partially or totally suspended. Many cases proved fatal very speedily, while others would linger until the patient had become extremely emaciated; in the latter cases there would frequently be a total loss of sight, and of most of the other senses. We are not aware that any post-mortem examinations were made, the people in the country being greatly opposed to anything of the kind."

Etiology.—In regard to the etiology of cerebro-spinal meningitis, Dr. Kendall (*op. citat*, page 108,) remarks, that "To attempt to delineate the causes of this fearful disease would be as difficult as in respect to any other epidemic disease; or to explain why it should prevail in my locality, and leave untouched the village and vicinity of Baldwinsville, but three miles to the westward, situated upon the same river, and with apparently the same causes existing to produce it, would be equally difficult. It is proper, however, to remark, with respect to a general cause, that the weather was steadily and excessively cold, and it was observable that as the weather grew colder, new cases of the disease continually occurred, and, as it became milder, they diminished. Thus it fluctuated from time to time, and with the approach of spring the disease nearly vanished."

Dr. CRAIG, in the *Buffalo Medical Journal*, states that in his vicinity the disease was, for the most part, confined to low miasmatic regions; a few cases, however, occurred seemingly outside of these influences; but these were rare, and he thinks that if all the facts were known in respect to them, it would be found that the patients had been exposed to the same exciting causes as those who lived in marshy districts.

The first appearance of the disease was soon after the melting of a large body of snow, by a south wind, in 1857, and "the sudden change in the weather" was the popularly assigned cause of the epidemic; but in 1858, Dr. Craig remarks, no such cause could be given. He believes it can be shown that, in his neighborhood at least, the disease was confined to miasmatic localities. During the epidemic there was a prevalence of miasmatic diseases—intermittents and remittents—of unusual persistence and severity; this, with the marked periodicity in the phenomena of the milder cases, and of the latter stages of the more severe, Dr. Craig believes to show conclusively that the disease was of miasmatic origin.

Treatment.—In respect to the treatment of cerebro-spinal meningitis, Dr. Kendall remarks that venesection was practiced in one case with a favorable result, but in no other dared he resort to the remedy, on account of the evident tendency, which was invariably present, to rapid and fatal prostration. Anodynes, even in large doses, seemed in the early stage to increase the watchfulness; but subsequently, after an evacuation from the bowels had been procured, they often quelled the intense restlessness of the disease like a charm. In some cases, cold applications to the head appeared to be pleasing to the patient; in other, and the majority of instances, warm fomentations, as of hops steeped in warm water, applied to the scalp, with heat to the lower extremities, were productive of a good effect.

In cases in which the brain and spinal nerves had become, as it were, benumbed much immediate benefit was derived from the application of several blisters to various parts of the surface, particularly upon the neck. When, in the first stage, the patient was semi-delirious, and tossing about with pain, calomel in large doses, was found to be the best remedy—a state of ease and quietness generally ensuing so soon as the calomel produced a free discharge from the bowels. In all stages of the disease, when the bowels are inert, procuring a free discharge of dark offensive stools by the administration of calomel, has the effect of rousing the patient from his state of stupor.

In the early stage of the disease, quinine was found to be utterly useless as a means of arresting its progress. Subsequently, however, to the first stage, when there were still much restlessness and wakefulness, its use, in full doses, sometimes induced perspiration and a state of calmness; still later in the disease, in smaller doses, it had some value as a tonic.

If the patient survive the first period of the attack, and then sinks into a state of indifference, according to Dr. Kendall, nothing is left for the physician to do but merely to watch the progress of the case, and meet whatever symptoms arise with their appropriate remedies. On many days it will be apparent that the efforts of nature are doing as much for the patient without, as they could with, therapeutic aid. Whatever treatment may be necessary during this stage, it must be of an alterative, stimulant, and tonic character.

In the treatment of cerebro-spinal meningitis, Dr. Squire prefers, during the cold stage of the attack, the free use of brandy and other stimulants; but if the patient survive this period, and a severe paroxysm of fever sets in, with unmistakable evidence of cerebral congestion, he questions whether the lancet might not be admissible, or even judicious. It is a sad truth, however, he remarks, that in the more formidable cases all treatment was found to be alike unavailing.

Dr. Craig remarks that in any form of the disease depletion had a mischievous effect. He found that the administration of the mildest cathartic was always followed by an alarming prostration.

"If the patient is seen during the chill, every means should be used to promote speedy reaction, as the warm bath, surrounding the patient with heated bricks, or bottles of hot water; hot drinks, brandy, and ammonia internally; sinapisms to the legs, abdomen, spine, etc. After reaction has been established, the local symptoms are to be combated by cold applications to the head and neck, assiduously persevered in, so as to reduce the violence of the reaction. Should these not afford relief, warm fomentations of hops and vinegar may be substituted; they are often grateful to the patient by quieting pain and procuring sleep. The vomiting may, in general, be relieved by the use of some bitter stomachic infusion—as infusion of quassia, given cold, or by a pill of opium. If these fail, an emetic will often succeed."

In regard to blisters, Dr. Craig has seldom seen any good effects result from them; on the contrary, he has known them to be productive of great irritation and restlessness. Nervous symptoms are to be relieved by the use of valerian, musk, assafœtida, etc. The "sheet-anchor" in these cases, however, Dr. Craig has found to be the sulphate of quinia in doses of from 30 to 40 grains, in the twenty-four hours, as the stomach will bear it. "The subintrant character of the disease in its early stages, will not," he remarks, "allow us to wait for an intermission; but the remedy should be given, in divided doses, every three or four hours, and should the case be prolonged, or of the milder type, I know of nothing more effectual than Fowler's solution, in doses of from three to five drops, three times a day."

Iodide of Zinc in Chorea.—We are informed in the *New Orleans Med. News*, that DR. BARLOW still continues to employ the iodide of zinc in the treatment of chorea, when occurring in patients of a strumous diathesis. The remedy was introduced by him some two years ago. In cases of chorea in which there exists no peculiarity of diathesis, Dr. Barlow prefers the sulphate of zinc. Besides the influence which the iodide of zinc exerts over the strumous cachexia in cases of chorea occurring in those in whom such a cachexia exists, it may be useful also in the control of the rheumatic diathesis to which chorea has been shown to be closely related. Good authorities could be adduced who account for the frequency with which affections of the heart are found to complicate chorea, by supposing the latter to be dependent upon a morbid condition of the system very nearly related to rheumatism—resulting from similar causes, and occurring more frequently in individuals predisposed to rheumatic affection than in those in whom no such predisposition exists. A little girl was recently discharged from under Dr. Barlow's care, in whom, under a course of the iodide of zinc, resorted to for the cure of chorea, a loud cardiac *bruit* had become very much diminished in intensity.

Cholera Infantum.—Etiology.—DR. ROBERT A. GHOLSON, of Petersburg, Va., in a paper on this disease contained in the *Virginia Medical Journal* for May, July, and August, 1858, denies its dependence on malaria, and endeavors to show that its etiology, as taught by most American authors, who connect it essentially with some peculiarity of our climate in regard to a vitiated atmosphere, intense atmospheric heat, or vicissitudes of temperature, is unsatisfactory and inconsistent with facts. In the first place he maintains it to be an error to suppose cholera infantum to be a disease peculiar to the United States. Neither is the disease, he remarks, confined, as has been asserted, to our large cities, to low unhealthy localities, or to the season of the greatest heat, but in the southern and western sections of our country it prevails alike in town and in country, in the most elevated and salubrious regions, as in low, wet, and malarial neighborhoods, and in spring, fall, and winter, as in midsummer. He therefore maintains, that a disease which would thus seem capable of being developed in almost all climates, seasons, and localities, cannot depend for its occurrence upon atmospherical heat, atmospherical vitiation, or any other atmospherical influence, however much these various conditions of atmosphere may confessedly affect its prevalence and fatality.

It is true, as Dr. Gholson remarks, that there is scarcely a European writer on the diseases of children who does not, under some name or other, describe very accurately cholera infantum, its symptoms during life, and the appearances presented after death. But no European authority, so far as we are aware, has declared the disease to be endemic—widely prevailing and particularly destructive of infantile lives—in the large cities of Europe, during the season of most intense heat. The extent of its prevalence and fatality being always in direct proportion to the heat of the summer and to the crowded and unwholesome character of the entire city or particular sections of it. That such is the case in the United States is proved by statistics, of the entire accuracy of which there cannot be a doubt.

Dr. Gholson insists, and very correctly, that in order to explain the production of cholera in children at the particular age to which its occurrence is almost exclusively confined, and also the universality of its occurrence, we must invoke the agency of those *physiological changes* which dispose so inevitably to certain diseases at certain periods of life: that these changes about the period of primary dentition predispose so powerfully to the occurrence of the morbid phenomena which constitute the disease under consideration, that these become developed under the influence of exciting causes that are almost universal and omnipotent; while the prevalence and malignity of the disease are chiefly influenced by a high atmospherical temperature, especially when associated with atmospherical impurity.

Nature of the Disease.—Dr. Gholson presents a brief synopsis of the symptoms, course, etc. of the disease, and of the developments of pathological anatomy, from which he deduces the opinion that it consists essentially in an affection of the follicular and glandular apparatus of the stomach and intestines, attended by a morbidly increased action of their proper functions. That, although the local disease is not necessarily inflammatory in its character, it is nevertheless very prone to run into inflammation in its progress. He considers "the simple uncomplicated *follicular* affection to be the proper *normal* type of the disease, demanding our principal attention in *the great majority of cases*, and which, in all cases, however complicated by other pathological conditions, should never be lost sight of."

Somewhat similar views to those of Dr. Gholson in reference to the etiology and nature of cholera infantum were advanced by DR. EDWARD PARKER, of the City of New York, in a paper contained in the *Transactions of the Medical Society of the State of New York* for 1857. Dr. Parker endeavors to show that, contrary to the generally received opinion of the profession, cholera infantum is not a disease peculiar to this country; that it is not almost entirely confined to large cities; that neither its symptoms, course, nor pathology entitle it to a separate place in our nosological lists; that its treatment is not to be distinct from that of diarrhœa on the one hand, and of dysentery on the other; and that the cerebral symptoms occurring in the advanced stages of the disease are not those of hydrocephalus.

Dr. Parker adduces the descriptions given by Dr. West, of London, of inflammatory diarrhœa, and of Dr. Bouchut, of Paris, of infantile entero-colitis, which, in all their essential features, will certainly represent very accurately a well-marked case of cholera infantum. There can be no doubt that a disease identical with that known among us as cholera infantum does prevail to some extent in different portions of Europe. It is nevertheless true, that infantile cholera is the especial endemic, during the summer season, of the larger cities of our Middle, Southern, and Western States, and that nowhere else does it prevail to the same extent, and is productive of an equal amount of mortality. No dependence is to be placed on the census returns, quoted by Dr. Parker to prove that cholera infantum is equally prevalent beyond as within the limits of large cities. In the year to which they refer, instead of 260 deaths occurring in the entire State of Pennsylvania, as they present, the Reports of the Board of Health of Philadelphia show a total of 505 for that city alone. But it is not denied that the disease may and does occur out of cities. Wherever children, during the period of their first dentition, are exposed to a hot, and at the same time impure, damp, and stagnant atmosphere, and are improperly fed, and are lodged, especially at night, in crowded, filthy, and unventilated apartments, whether in or out of the city, they will be liable to an attack of cholera infantum; but as this concurrence of morbific agents is more frequently met with in the narrow courts, streets, and alleys, and in the badly constructed, illy kept, and over-populated dwellings of the poor and improvident of large cities, it is there that the disease prevails every summer, and is productive of the greatest mortality.

Cholera infantum is by no means a specific disease; it is in its pathological character closely allied to the other intestinal profluvia of infancy. While in its early stage it consists, in probably the majority of cases, simply in an increased and somewhat altered secretion from the mucous follicles and the glandular bodies of the intestines, yet, in its second stage at least, it is, on all hands, admitted to be strictly an entero-colitis. That such is the case is proved beyond the possibility of a doubt by the pathological researches of Dr. Edward Hallowell, as recorded in the *American Journal of the Medical Sciences* for July, 1847.

Treatment.—It is evident, therefore, that the general indications of treatment must be the same in cholera infantum as in the inflammatory forms of diarrhœa, and in the entero-colitis of infancy. As the main agents in the production of cholera infantum are unquestionably a high degree of solar heat, a damp, confined, and vitiated atmosphere, improper food, etc., to insure a speedy cure of the disease, it is of primary importance that the patient be exposed to a cool, dry, fresh air, and be furnished with a wholesome, well-regulated diet; with these hygienic measures, and the use of the warm bath daily, but little positive medication will, in the early stage, of most cases be demanded; without them, all other remedies, however well selected or assiduously administered, will very generally fail to produce any permanent good.

In respect to the cerebral symptoms attendant upon the advanced stages of protracted cases, there is no doubt that they are, very generally, the result simply of exhaustion and anæmia, and are totally unconnected with any amount of meningeal inflammation. At a somewhat earlier period of the attack we have, however, in numerous instances, observed the occurrence of all the symptoms of acute meningitis, resulting in early effusion, as shown by repeated examinations after death.

Etiology.—In the report of the medical topography of Somerset County, Pa., (*Trans. of the Medical and Surgical Faculty of Maryland* for June, 1856,) Dr. Handy remarks that cholera is much less frequent in that county now than formerly, but to what causes this diminution is to be attributed he has been unable to determine. The disease does not appear to him to depend upon malaria. "It usually commences," he remarks, "in the latter end of May if it is hot, or about the beginning of June; it rarely occurs *de novo*, after the middle of August. I have known it to be present in infants two months old, but have never, to the best of my recollection, seen it after the second summer. There is nothing particular in the disease as it prevails here, except its unusual mildness of form. It is, undoubtedly, the product of excessive heat, more especially when combined with the relaxing effects of moisture, and it is excited by the process of dentition, and imprudence in feeding. As these causes are with difficulty avoided, we always have cases of the disease, though fewer than formerly."

Morbid Anatomy.—In the *New York Journal of Medicine* for July, 1858, Dr. J. Lewis Smith presents a report of the post-mortem appearances observed by him in eleven cases of cholera infantum.

In six of these cases the stomach was not examined; in the remaining five it seemed healthy. This fact, Dr. Smith remarks, is the more interesting when we consider that some eminent writers have asserted that the stomach presents the lesions of inflammation, and recollect that one of the prominent and obstinate symptoms of the disease is usually referable to this organ. He finds, however, from his notes, that vomiting was not present, during the period of attendance at the Dispensary, in 46 patients out of an aggregate of 133; and in only 24 of those who suffered from it did it occur at the commencement of the case.

The small intestines appeared natural in three cases; in four they were moderate, or slightly injected in places. In the remaining four, the records state that the jejunum seemed healthy, but the ileum was more or less inflamed; continuously so in only one case. In two cases the ascending colon was not examined; in two it presented the usual healthy appearance; in five it was vascular in patches; and in the remaining two it was uniformly injected. The descending colon was, in all the cases, the principal seat of inflammation, its mucous coat presenting a continued red surface. In four cases, the records state that the mucous membrane was thickened; it may have been so in others. Follicular ulceration was present in five cases. In two or three cases, on tracing the intestine into the pelvis, it was noticed that the signs of inflammation gradually diminished. The liver was inspected in only four of the cases; in three of these there was no appreciable alteration in its condition discovered; in the other case it was congested.

Dr. Smith refers to the following as the important particulars developed by the foregoing dissections:—

"1st. That the stomach, though so irritable in the disease, and the liver, in the few cases in which it was examined, did not present any notable alteration from the healthy state.

"2d. That in all the cases there was well-marked intestinal inflammation. Two died when only five days sick, and yet in both the descending colon presented the inflammatory lesion in a high degree.

"3d. That the inflammation was not confined to the mucous follicles, as it has been stated to be by some writers, but extended in patches over the mucous surface.

"4th. The portion of the intestinal tract in which the inflammation was most intense was, in all the patients, the descending colon, and *colitis* was *the only lesion* invariably present."

Dysenteric form of Cholera Infantum.—In the paper of Dr. Gholson, already referred to, (*Virginia Med. Journ.*, May, 1858,) there is described a form of cholera infantum, said to be of frequent occurrence in the Southern and Western States, and attended with great fatality. In this form the intestinal disease is complicated with the prevailing fever of the district in which it occurs. Thus, in the upper portions of Virginia and in some other States, it will be modified by the concurrence of some form of continued fever; but in lower Virginia, and other flat and miasmatic localities, by some form of periodic fever. This form of the disease, especially in the vicinity of Petersburg, assumed a rapid and fatal course. It would seem to prevail often as an epidemic, presenting, in the infant, the analogue of that terrible disease of the adult, "epidemic dysentery." It is generally ushered in by vomiting and purging, attended by a grade of fever and a predominance of nervous symptoms which no existing local affection can possibly explain. In Virginia, the fever, unless from its very onset there occur inflammation of the brain or of the abdominal organs, will either remit or intermit, or exhibit a strong tendency to do so, in the course of twenty-four hours; the stomach and bowels becoming comparatively quiet, and the child emerging from its state of torpor and craving food. In a few hours, however, the feet become cold, the head hot, and the stomach irritable, and there speedily occurs a renewed exacerbation of fever, attended by a state of torpor, from which the patient is aroused by the paroxysms of tormina and tenesmus, with which the greenish, and more or less mucous and often bloody discharges from the bowels are usually accompanied. So far as Dr. Gholson's own observations extend, he has never known cholera infantum to prevail extensively in the country and be attended with much mortality there, without presenting this form.

Treatment of Cholera Infantum.—After some judicious remarks on the hygienic treatment of cholera infantum, which correspond, in their general outline, with those of most of the writers on the disease, Dr. Gholson proceeds to consider the remedial treatment. In the first stage of the more simple and milder forms of the disease he trusts its cure to the acetate of lead and calomel. The first of these he considers our most valuable remedy so long as the discharges continue profuse and watery, and no decided indications of inflammation or of prostration present themselves. He gives the calomel alternately with the sugar of lead, in doses of from one-twelfth to one-sixteenth of a grain.

When the discharges are acid, he gives the bi-carbonate of soda in carbonated water; when there is a decided alkaline condition of stomach he resorts to some acid; when there is a tendency to collapse, diffusible stimulants are necessary. To relieve irritability of stomach, his remedies are, the tepid or warm bath, a sinapism to the epigastrium, sinapized pediluvia, stimulant liniments to the spine, and anodyne enemata. In the diarrhœal stage, with mainly undue peristaltic actions of the bowels, nothing, he considers, will be required to insure recovery but a well regulated diet, the tepid bath, and perhaps some cordial laxative, combined with or followed by an anodyne. When the discharges are of a greenish hue, he advises alkalines; when clay-colored or whitish, any of the milder preparations of mercury; when they continue watery and profuse, the acetate of lead. If these means fail, some one of the vegetable astringents, with the addition of a small quantity of paregoric, laudanum, or tincture of hyoscyamus must be given.

When the disease threatens to become chronic, especially if it be attended with much emaciation and debility, Dr. Gholson cautions against the continuance of mercurials, as they often lay the foundation of a state of hopeless cachexia from which no subsequent course of treatment, however judicious and persevering, is calculated to rescue the patient.

When inflammation of the digestive mucous membrane supervenes, but especially when entero-colitis occurs, with decided dysenteric symptoms attended by continued symptomatic fever, Dr. Gholson directs leeches; calomel, alone or combined with ipecac., hyoscyamus, or opium; emollient poultices, followed by warm anodyne fomentations, rubefacients, and blisters. When tormina and tenesmus are severe, he recommends occasional anodyne enemata. When the inflammation is seated higher up, and is still acute, and with no symptoms of prostration, injections of cold water are said to prove beneficial.

In *the inflammatory type* of the disease, the patient should be confined strictly to mucilaginous drinks, with the addition of small quantities of bi-carbonate of soda, or lime water. Ice confined in a thin gauze bag should be given the child to suck. As the acute stage declines there often remains a sub-acute affection of the large intestines, especially the rectum, attended with troublesome tormina and tenesmus. This calls for sedative, astringent, and anodyne injections. The best, according to Dr. Gholson, is a solution of acetate of lead, then the sulphate of zinc and the nitrate of silver. Two or three grains of either of the first two, or half a grain of the last, may be dissolved in two tablespoonfuls of some mucilaginous fluid with the addition of a few drops of laudanum, for an injection, the return of which should be prevented by external pressure.

The disease is sometimes ushered in with great nervous debility and restlessness, hot, swollen, and inflamed gums; a flushed face, and excited eye, and hot head, while the stomach and bowels are, perhaps, comparatively quiet. In such cases, especially if attended with much vascular excitement, Dr. Gholson directs incision of the gums, leeches to the temples, or mastoid processes, cold to the head, revulsives to the extremities, the tepid bath, cathartic doses of calomel, or cathartic enemata. Dr. Gholson is adverse to the use, in these cases, of blisters: in the diseases of children he has found them to be "more frequently *co-irritating* than *counter-irritating* agents." In every case where inflammation of the brain and its meninges is threatened, we should not hesitate promptly to resort to the above remedies; still, in a disease, one of the most striking features of which is rapid emaciation and debility, we are carefully to avoid all unnecessary depletion. Cases may occur attended with starting and indications of alarm at the slightest noise, followed by imperfect sleep, with twitching of the tendons, or even of the muscles of the face, the patient awaking with screams of terror, and perhaps a momentary flushing of the cheeks, and heat of the head, where depletion would do harm—such cases being best controlled by the tepid bath, a composing draught, or anodyne enema, cold to the head, and a dark, cool, quiet room.

Late in the disease a state of drowsiness or stupor often ensues, attended by a piteous wail or moan. The discharges, perhaps, have ceased or notably diminished. In this condition there is no reason to suspect inflammation of the brain; there is, on the contrary, a state of exhaustion—a flagging of the dynamic nervous energies, and nothing but a prompt resort to suitable stimulants will save the child.

In the *epidemic or dysenteric form* of cholera infantum Dr. Gholson recommends the sulphate of quinine, given at the earliest possible period. Any condition of the system incompatible with the quinine, is to be attacked with a boldness and energy that would be inadmissible under other circumstances. So soon as the paroxysm begins to moderate, an enema composed of some two grains of quinine, as many drops of laudanum, mixed in about a tablespoonful, or more, of any mucilaginous fluid, is directed to be given. If this be well borne, the same enema should be repeated every three or four hours. While the quinine is thus given cold may be applied to the head, and poultices, rubefacients, or blisters, to the abdomen So soon as the case is divested of its periodic character, the subsequent treatment is pretty much the same as in the ordinary inflammatory forms of the disease.

Chronic Cholera Infantum.—Treatment.—When the disease has become chronic, there is, Dr. Gholson remarks, usually more or less inflammation with ulceration, chiefly of the mucous coat and follicles of the large intestines, attended with much emaciation and debility. Here our chief reliance is on the vegetable astringents; but in cases in which the discharges are mucous, gleety, or purulent, the mineral astringents and acids, and the terebinthinate and balsamic preparations, with an occasional addition of some preparation of opium or hyoscyamus are to be preferred. When the disease is confined chiefly to the lower portion of the large intestine, sedatives and astringents should be administered by the rectum. Dr. Gholson recommends especially the sulphate of zinc, two grains, gradually increased, in one or two tablespoonfuls of some mucilaginous fluid, with the addition of a few drops of water, given two or three times a day. In these chronic cases, the assiduous employment of the warm bath, which may be rendered more stimulating by the addition of mustard or salt; with frictions, rubefacients, and blisters, to the abdomen should not be neglected. When there occur much emaciation and debility, with loss of appetite, tonics and stimulants will be required. When anæmia, with degradation of constitution, is present, Dr. Gholson directs some preparation of iron, as the iodide or citrate, with quinine, etc. Often the best thing we can use, he remarks, is "a good article of old brandy."

In regard to diet no arbitrary rules can be laid down. It will be often found that meat teas, broths, or juices, will agree with the patient far better than milk and the usual farinaceous preparations. There are many cases in which no medicine would seem to do good; here everything depends on sustaining the strength of the child until the occurrence of cold weather. A common practice with the physicians of a part of Virginia, is, we are told, in such cases, to put the patient on the use of old apple brandy and sweet potatoes, and generally with the happiest result. Often it is impossible to say in advance what will agree with our little patients. They often crave apparently objectionable articles of diet, but which on trial are found to agree admirably with them. Hence, we will often act wisely by consulting rather the suggestions of nature than the dictates of reason—remembering that there is much truth in the maxim, "*quod sapit, nutrit.*"

Intestinal Hemorrhage in an Infant.—The occurrence of hemorrhage from the bowels during infancy, though comparatively rare, is nevertheless sufficiently frequent to attract the notice of practitioners. Cases of it are recorded by many of the continental writers on diseases of children, and we have an account of one related by Dr. N. C. Stevens, in the *Boston Med. and Surg. Journal* for June 17, 1858. The patient was an infant three days old. Death promptly ensued. The following is an account of the appearances detected upon an examination of the body thirty hours after death.

"Rigor mortis very slight; the body—even its most depending portions—extremely white and bloodless. Brain not examined. On opening the chest and abdomen, all the organs appeared naturally developed. The heart and blood-vessels, the lungs, liver, pancreas, stomach, kidneys, and supra-renal capsules, were more or less pale, according to their structure, and entirely destitute of blood. The spleen, probably by reason of its structure at this age, seemed filled with dark grumous blood, which was easily pressed out on dividing the organ. The stomach contained a small quantity of partially digested milk. The entire alimentary canal was slit open, and its mucous surface exposed. The duodenum and upper portion of the jejunum were paler than usual; the lower portion of the latter, and the upper portion of the ileum exhibited various degrees of congestion, and were covered with dark grumous blood. Below this, and embracing about two feet of the middle of the ileum, it was of an ivory whiteness, and contained nothing but the natural mucous secretion, exhibiting a wonderful contrast to the portions above and below. The remaining portion of the ileum, and all the large intestines were congested, of a dark-red color, and covered with coagulated blood. The sub-mucous and peritoneal layers of the intestine, opposite the congested portions, were more or less discolored—probably a cadaveric change. On sponging the mucous surface carefully, no abrasion, softening, or other change was observable. The vessels usually observed traversing the intestines were empty; in fact, the body appeared to be completely drained of blood. The child was born of healthy parents. No hemorrhagic predisposition can be traced. No spot or pimple was observed during life. The remaining children, three in number, are healthy and robust."

Remittent Fever of Children.—Etiology.—In a paper on this disease by DR. J. LEWIS SMITH, contained in the *New York Journal of Medicine* for January, 1857, it is admitted that gastro-intestinal disease may, without doubt, produce fever of a remittent type in the impressible child, yet the following facts, derived from the author's observation of the disease, made exclusively in the upper portion of the island on which the City of New York is located, have convinced him that in a large majority of cases it is strictly of miasmatic origin.

"First.—The disease is very prevalent in spring and autumn, and rare in midsummer and midwinter, like other malarious affections. There are certain streets where he has known it to prevail almost like an epidemic, in the vernal and autumnal months. If the disease was, as Dr. Condie states, 'in every instance either a gastro-enteritis, an ileitis, or an entero-colitis,' how can this influence of the seasons be explained?"

We cannot perceive how, even admitting the etiology of the disease as suggested by Dr. Smith to be correct, that this would in any degree invalidate the views advanced by ourselves and others in respect to the leading pathological character of infantile remittent fever. That the disease may in many cases be generated by malaria we think there can be little doubt, but that it may be and is frequently developed independently of malaria, in the sense in which that term is employed by Dr. Smith, we are certain, from having met with it in numerous instances in localities where miasmatic diseases are unknown.

"Second.—Often, but not always, the remissions are more marked than would be likely to occur in a symptomatic fever. The child may appear almost well in the morning, but in the afternoon and evening exhibit such intensity of symptoms as to cause the greatest anxiety on the part of friends."

We are to recollect again, however, that it is a very common occurrence for the remissions in the fever under consideration to be so short and imperfect, as to approximate it very closely to those of a decidedly continued type. From the symptoms of the disease during life, and its usual progress in a vast number of cases, and likewise from the lesions so commonly discovered after death, it may be set down as a disease identical, in all essential characteristics, with the typhoid or enteric fever of the adult.

"Third.—The symptoms are not altogether such as we should expect to find in a purely local affection. The patient will sometimes, it is true, when asked where he feels pain, place his hand on the abdomen, and pressure upon the abdominal parietes not unfrequently produces great distress. Dr. Condie alludes to this tenderness, evidently believing it to be a symptom of inflammation, but I have always been satisfied that it was neuralgic, from the fact that pressure on the lumbar vertebræ, and frequently, also, on the chest and limbs, caused as much suffering as when it was made on the abdominal walls. The patient, if old enough, will complain, too, of aching of the head, back, and limbs, which is more the symptom of an independent fever than of inflammation. Again, constipation is ordinarily present, unless in the last stages of the disease. Intestinal irritation or inflammation sufficient to cause so intense and protracted a fever as is often present, would be more likely to cause diarrhœa."

But we would remind Dr. Smith that constipation is not a necessary nor invariable symptom of the remittent fever of infants even at the commencement of the attack. Very many cases are attended from an early period with frequent, small, thin, and offensive discharges from the bowels, attended sometimes with much straining and griping. The fever is almost always protracted, but it will seldom be found to merit the term intense, unless the latter be used in a sense different from that in which it is usually employed.

"Fourth.—Children, even nursing infants, take intermittent fever; why then may they not take remittent fever? In my class at the Dispensary children with these diseases are frequently brought in together.

"Fifth.—I have found that measures directed to the alimentary canal, beyond simple purgation, do more harm than good. They fail to ameliorate symptoms; they weaken and distress the child. Moreover, when remissions occur, quinine will materially abridge the disease."

Neither of these positions demands any particular comment. The first is not denied, and the second, even if sustained by the results of extended series of clinical observations made by different observers, would be insufficient to overturn the positive evidence furnished by the pathological anatomy of the true remittent fever of children.

"Sixth.—Death seldom occurs from this affection. In one or two fatal cases which have fallen under my observation, the result followed convulsions and coma; and Dr. Stewart remarks, 'Dissections have furnished but little light on the morbid condition of the system in remittent fever, for, on a fatal termination, the transmission to the brain is the usual course of the disease.' The mode of death, then, and the post-mortem appearances, do not comport with the doctrine that the intestines are the seat of the morbid process. Dr. Condie does not agree with Dr. Stewart, but attributes death to inflammation of the intestines. I do not think that the remittent fever which I have treated, if uncomplicated, ever terminates in this way, for I have never seen a case in which abdominal symptoms did not yield to simple means."

We have nowhere said that in every fatal case of infantile remittent fever, death was the immediate result of intestinal inflammation, while such is probably the case when death occurs in very acute cases, which very rarely happens; in most of the more protracted cases the patient, when they result fatally, perishes from the effects of mere exhaustion—the suspension of the digestive and nutritive functions, and the depraved state of the fluids thence resulting. To the negative statements made by Dr. Smith, we simply oppose the positive evidence as to the existence in the disease of intestinal lesions of an inflammatory character, presented by some of the most authoritative practitioners of Great Britain and continental Europe, to say nothing of that derived from our own limited post-mortem examinations in fatal cases of the disease.

"Seventh.—Continued fever of the adult is of rare, and infantile remittent of frequent occurrence in the locality of my practice. The latter is not then identical with the former, as it appears to be in London and Paris, from the descriptions given by Rilliet and Barthez, and West."

To this position we can only reply that our own experience, and the deductions from that experience, are directly the reverse of those of Dr. Smith.

The above facts appear to Dr. Smith to prove conclusively that the form of infantile remittent fever it has been his lot to treat, has been generally of a miasmatic character. He thinks it very important to understand the nature of the affection, as the treatment will vary according to the theory we adopt. If, living in a malarious region, we embrace the Broussain views of the American authors cited by him, and treat the fever as a local disease, we shall fail, he thinks, to ameliorate symptoms, and be mortified and discouraged by the result of our treatment, if he be permitted to judge from his own experience. His reliance, he informs us, is mainly on expectant measures until remissions occur, and then on the exhibition of quinine. In cases thus managed, convalescence, he remarks, has been more speedy and certain than when opium, calomel, and counter-irritation were employed to remove intestinal irritation or inflammation.

Tracheotomy in Croup.—This subject is very fully discussed by DR. THOMAS F. ROTCHESTER, in a paper contained in the *Buffalo Medical Journal* for July, 1858.

In view of a series of considerations set forth in the first part of the paper, he concludes that the question of tracheotomy in croup must necessarily give rise to the following interrogatories:—1st. Under what circumstances, if any, should it be performed, and by what complications is it absolutely prohibited? 2d. What subsequent measures may be regarded as accessory or necessary? 3d. Is the operation in itself or in its consequences hazardous to life?

Circumstances that Warrant the Operation.—"Adopting," he remarks, "the hypothesis of the 'croupous crasis,' if not absolutely, at least partially, must we, therefore, with M. Piorry and Jules Guerin, question the propriety of employing tracheotomy for the relief of a local manifestation of a general disorder? Their mode of reasoning might, with almost equal propriety, be urged against endeavoring to divert gout and rheumatism from the stomach or endocardium. Is the fact that the cavity of the trachea is almost invariably patent to a considerable degree a valid objection? It will be remembered that a membrane, if small, may, should one extremity become free, prevent egress or ingress of air, by valvular action. It will also be borne in mind that false membrane, acrid or inspissated mucus, or even an inflamed or turgid condition of the lining membrane of the larynx, unattended by secretion or exudation, may, unquestionably, give rise to long and repeated spasmodic occlusion of the glottis, a condition full of danger, which tracheotomy would render harmless. It next seems necessary to glance at the mortality of the disease. This, under various forms and combinations of treatment, Dr. Green's method possibly excepted, may be set down at two-thirds of all attacked; what the natural termination would be can only be a matter of inference; it is probable, however, that it would be fatal in nearly every instance; yet Dr. Ware tells us, that one of his patients, who was extremely ill, recovered spontaneously, he being so ungovernable as to successfully resist all attempts at medication." Dr. Rotchester also relates a case of unassisted recovery in a child two years of age. It had been ill several days—nothing was done, inasmuch as recovery was deemed impossible, the infant appearing to be moribund. The next day, however, it was better; inspection revealed a thick, false membrane on the tonsils. Recovery finally took place, but for three weeks the patient could not cry audibly, and his voice continued weak and hoarse for two months.

"Let us now look at the results of tracheotomy, and assume that three-fourths of those upon whom the operation is performed perish, although the statistics of Valleix make the proportion considerably less. We must remember that it has usually been employed as a last resource, when all other measures have failed, many of which, although proper in themselves, must to a certain extent prejudice the success of the operation. Tracheotomy should not be *contrasted* with the other means of treating croup, as being one mode in distinction from others, but it should be looked upon as a measure not to be neglected when all other rational treatment is evidently powerless; and in this aspect, to use the strong language of Mr. Henry Smith, of London, a success of but one in *ten*, or even one in *twenty*, justifies the procedure. The proper moment is not so much a matter of time, as of symptoms,—it may be within twenty-four hours of the seizure, or many days from the commencement of the attack. If, after general treatment, and especially topical treatment, has been fully and faithfully tried, the symptoms of suffocation are not relieved, or are become more threatening, and especially, if with persistent dyspnœa, there are manifestations of cyanosis, the operation should not be delayed. If, however, what may be termed the proper period has passed, may the trachea still be opened with any hope of permanent advantage? To this it may be replied, that if the symptoms are still chiefly referable to the upper portion of the air-passages, although conjoined with great exhaustion, the operation is advised by those who have practiced it most, even although from the previous failure of the vital force the patient may succumb to the shock produced by it. The age of the patient is an important consideration, the older he is, *cœteris paribus*, the greater the probability of a successful issue. Children under two years old 'invariably die,' says Trousseau, and such is the universal testimony. It is probable that the severity of the operation is too great for their tender age. It is possible that with them laryngotomy might, with advantage, be substituted for tracheotomy, as, comparatively, it is easily made and does not involve much time or loss of blood in its performance."

Complications Prohibiting Tracheotomy.—These Dr. Rotchester considers to be "rather those connected with the nervous and circulatory than with the pulmonary apparatus. They may be laid down as follows: delirium or stupor;

excessive prostration; feeble and very frequent pulse; coldness and pallor, or great lividity of the surface. With reference to bronchitis and pneumonia there is a diversity of opinion. It is held by MM. Rilliet and Barthez, as also by M. Guersent, that the extension of the membrane to the smaller bronchi, or pneumonia of a single lung, are not to be regarded as insuperable objections, although they certainly diminish the chances of recovery. All persons who have seen much of membranous croup will admit the difficulty and often the impossibility of determining by physical exploration the exact condition of the lungs. There seems to be one valid argument against operating when either bronchitis or pneumonia are supposed to exist, viz.: the success that M. Trousseau claims to have accomplished since the adoption of the woolen cravat, which is used exclusively to prevent the supervention of pulmonary disease."

Accessory Treatment.—In respect to this may be mentioned, Dr. Rotchester remarks, a well-ventilated apartment, maintained at an equable temperature, ranging from 70° to 75°; the atmosphere being kept moist by the evaporation of warm water; the adaptation of a light, coarse woolen muffler about the throat, and enforced alimentation, if food is not taken readily. If from any cause respiration is suddenly suspended, whether immediately succeeding the operation or some time subsequently, the lungs should be carefully inflated through the artificial opening, or if the suspension is produced by a clogging of the trachea or larger bronchi, an attempt should be made to remove the obstacle by inserting a large flexible tube, open at both ends into the trachea, and drawing upon it quickly and forcibly with the mouth. Roux saved a patient by this expedient, removing a clot of blood with a female catheter.

Dr. Rotchester recommends the operation to be performed under the influence of chloroform or ether, which, while it robs this formidable operation of all its terrors, may, also, we are told, do away with much of its dangers.

Danger of the Operation.—To this, which is the subject of the third of Dr. Rotchester's interrogatories, he replies: "There can be but this response—the operation is *in itself* hazardous to life—hazardous from the shock, from exhausting hemorrhage, and from inspiration of blood. It is also, probably, more hazardous to life in its consequences than equally severe operations in other portions of the body. But admitting the full hazard, both of the operation and its consequences, the question recurs as to the comparative risk of the operation or of its neglect." To this Dr. Rotchester would respectfully submit, that a full, and he trusted impartial, investigation of the subject leads to the conclusion that while tracheotomy, from its intrinsic gravity, ought never to be lightly or precipitately resorted to, it affords a possibility of recovery when hope from other resources cannot reasonably be entertained, and that moment having arrived, it should not be neglected or delayed.

Glycerine as a Local Application in Croup.—DR. E. R. MAYER, of Wilksbarre, Pennsylvania, in the *American Journal of Medical Sciences*, April, 1858, calls the attention of the profession to the use of glycerine us a local application in croup, believing it a remedy from which much advantage may be derived. He refers to its use by him in two exceedingly severe and well-marked cases, that occurred within a few days of each other. The one in a boy eighteen months old, the other in a girl four years old. In both the disease was developed during the decline of the eruption of measles. Suffocation seemed imminent in both cases. The treatment consisted in prompt emesis with sulphate of copper, by which the severity of the symptoms was mitigated, and afterwards, in the rapid introduction of calomel into the system; the use of from one to three grains of sulphate of copper, dissolved in water, every two or three hours, alternated at the same intervals with tartar emetic in nauseating doses, or the still more effective sedative, the veratrum viride, in doses of from two to four drops of the fluid extract; small blister over the upper part of the sternum, and the application of pure glycerine to the glottis, whenever its use was indicated by a return or increase of the brassy, ringing cough, or crowing respiration. The application of the glycerine was in each instance soon followed by a manifest softening of the sound of the breathing and cough, and a considerable reduction of the dyspnœa and general distress. This improvement usually lasted for a few hours, but by applying the glycerine at short intervals Dr. Mayer found that he was able to afford the patient an amount of permanent relief throughout the disease. In the younger of his patients expectoration of softened false membrane in shreds and patches, "a genuine *detritus*, mixed with altered mucus and a little dark blood," took place twenty hours after the application of glycerine was commenced, and in the other patient on the fifth day of the attack. "The croupy symptoms did not entirely disappear in either case until a day or two after the expulsion of the false membranes, but the patients were soon convalescent. Expectoration was promoted and recovery hastened by the administration of small doses of quinine and of chlorate of potassa with syrup of senega."

Dr. Mayer applies the glycerine by pressing down and drawing forward the tongue with the finger, and squeezing the contents of a long, thick camel's-hair brush, dipped in the liquid, over, as near as possible, the chink of the glottis, and then swabbing the whole throat. A sponge or portion of charpie may no doubt be preferable in some cases to the brush.

Belladonna with Mercurial Ointment as a Local Application in Croup.—DR. JOHN D. SHELTON, of Queen's County, New York, in the *American Journal of the Medical Sciences*, April, 1858, speaks in high terms of the application, by friction on the sound skin, over the trachea, in membranous croup, of an ointment composed of two drachms of the extract of belladonna combined with six drachms of the ung. hydrar. mite; the application being repeated every two hours. Two or three cases are related by him in which the ointment was employed in conjunction with other remedies, and apparently with good effects.

Scarlet Fever; use of Quinine in.—DR. EDWIN A. MORRISON, of Lawrenceville, Virginia, states, (*Virginia Medical Journal*, August, 1858,) that, in a practice of more than thirty-five years, he has repeatedly treated scarlet fever in its epidemic form. In 1837 it raged extensively in his section of the State. He treated the worst cases successfully with cold water affusions, as used by Dr. Currie, and he vainly believed that by this means he could control almost any case, but this opinion was soon shaken. In 1839 he encountered the epidemic again, when some of his cases defied the cold affusions and every remedy he employed. In 1856 he met it again. The first case to which he was called was that of a negro three years of age, when in a condition apparently hopeless. He ordered quinine, and directed the throat to be mopped with a solution of nitrate of silver. Contrary to his own expectation, and that of his friends, Drs. G. Mason and E. B. Jones, who saw the case frequently with him, the child recovered. A white female child, of delicate constitution, was the next patient seen by Dr. Morrison. The above-named physicians attended the case with him. No quinine was administered—the child died. Dr. Morrison cannot say positively how many cases he saw subsequently in this same family, but thinks about twenty. All of them were treated with quinine, and all but one recovered. The fatal case occurred in a negro boy about fifteen years old, whose condition was not made known until he was hopelessly ill. So soon as Dr. Morrison saw him he ordered quinine, but the lad survived but ten or twelve hours. Dr. Morrison treated ten or twelve cases in other families, all of which were put on the use of quinine, and all recovered. Early in May, 1858, the disease again appeared within the range of his practice; he treated about fifteen cases. One of these was a negro girl between ten and twelve years of age, who was speechless when first seen. She died in a few hours. Another was a negro child only two years old, who died of laryngitis after having survived the constitutional impression of the disease. The remaining cases, with two exceptions, have all fully recovered. The two excepted cases have had dropsical effusion. This day (June 5th) they are so much better, remarks Dr. Morrison, as to leave no doubt as to their speedy recovery.

The plan of treatment pursued by Dr. Morrison is to order quinine upon the occurrence of the first symptoms of the disease, in doses adapted to the age of the patient, repeated every two or three hours, until the system is brought under its influence. He gives, occasionally, a few grains of blue mass to move the bowels gently, and mops the throat with a strong solution of nitrate of silver. When the patient is old enough, he directs the use of a gargle of red pepper and common salt, or the throat to be washed with it. Dr. Morrison remarks that his friend Dr. R. Sims, of the same county, has employed quinine in some few cases of scarlet fever with the happiest effects.

Yeast in Scarlet Fever.—DR. A. S. MCCLEAN states, (*Boston Med. and Surg. Journal*, 1858,) that some years ago his attention was directed to the use of yeast in scarlet fever by an article from the pen of Dr. Smith, of Baltimore; he was in consequence induced to employ it during the winter of 1857–58 in fifty-three cases of the disease, being all that fell under his care during that epidemic. The whole of these cases recovered. The yeast was given from the onset of the disease in doses of from a tea to a table spoonful every two or three hours, and continued until the period of desquamation. In about two-thirds of the cases inunction with lard was employed in addition to the yeast.

Acetic Acid in Scarlet Fever.—DR. CASSELBERRY bears strong testimony in favor of the acetic acid as a remedy in scarlatina, (*Cincinnati Lancet and Observer*, February, 1858.) His mode of prescribing it is to combine two fluidrachms of the pure acid with three fluidounces of distilled water, and three fluidrachms of simple syrup, of which he gives as a dose a teaspoonful every three hours. At the same time he envelopes the patient in a sheet wrung out of tepid water, and continues it on from half an hour to an hour. He applies poultices of roasted onions to the lumbar region if there be a suspension of the urinary secretion. For the reduction of the glandular swelling of the neck he prefers the use of camphorated olive oil.

Diluted acetic acid is also spoken of in the highest terms, as a remedy in scarlet fever, by DR. B. F. SCHNECK, of Lebanon, Pennsylvania, (*American Journal of the Medical Sciences*, July, 1857.) Of sixty cases treated with the acid he states that he lost none. He prepares the system by an aperient of three to five grains of calomel, followed in two hours by castor oil, or a mixture of rhubarb and magnesia, applying at the same time around the throat, from ear to ear, a piece of flannel saturated with a mixture of soap liniment, f℥j; camphor liniment and laudanum, āā ʒij. After the bowels are opened he gives to a patient nine years old a tablespoonful of a mixture composed of from fʒj to fʒiv of the officinal distilled vinegar to f℥iv of water, sweetening it at the time it is given—the dose to be repeated every few hours, and the strength of the acid increased in proportion to the threatening nature of the symptoms. Dr. Schneck gives graduated doses of brandy two or three times a day, from the beginning of malignant cases, and on the second or third day in anginose cases.

Veratrum Viride in Scarlet Fever.—DR. J. FITHIAN, of Woodbury, New Jersey, states, in a communication contained in the *Medical and Surgical Reporter*, June, 1858, that in the winter and spring of 1857–58, he had employed in a number of cases of scarlatina Norwood's tincture of veratrum viride, much to his satisfaction. "I had not," he says, "known it to be used in scarlet fever, but it occurred to me that inasmuch as one of the most constant attendants of the disease is a quick, frequent pulse, it might control and bring down this rapid action, and thereby enable the system to bear up under the disease, promote the favorable action of other remedies, and leave it to run its course to a favorable termination. Upon trial I found this to be the case. Its effects were very decided, and while it will not—nor is it calculated to—supersede other remedies, it has in my hands thus far been one of the most efficient and satisfactory."

Treatment of Scarlet Fever.—In the same communication in which Dr. Fithian furnishes us with his experience of the effects of the veratrum viride in scarlatina, he gives a statement of his mode of treating the disease generally, which, as it comprises the therapeutic experience of a well-instructed and skillful physician, in one of the most unmanageable diseases of infancy, is invested with a special interest.

"Whenever," he says, "I am called to a case of scarlet fever, and the throat is at all sore, I use the cold cravat; that is, a napkin wrung out of cold water, or if there is much sensitiveness to cold, slightly tepid, extending from ear to ear, and from breast to chin, covered externally with a fold of dry flannel. If I do not, as is generally the case, see the patient until after the chilly stage has passed, in addition to the wet cravat I order calomel, in doses of from six to twenty grains, according to the age of the patient, followed in one hour by a suitable dose of castor oil. If the skin still continue hot, I use frequent ablutions of cool or cold water all over the body, with a little oil on the wet napkin used for the bathing. If the head is affected I lay upon it a wet towel, wet the hair thoroughly, and fold the towel over it, or use, at discretion, a bladder of ice. The object is to cool down the skin as near as possible to a natural heat, and keep it there, and prevent congestion of the brain where it is threatened. In addition to the oily napkin for bathing, I like a little salt grease twice a day—the skin of ham or salt pork is a very good article—to pass over the body; it allays the itching and soothes the patient, and with the cold affusion lessens the inflammation of the skin, which by the extent of the sympathies of the latter aggravates every other symptom. When the patient is old enough to gargle, I use the Cayenne pepper tea—an ordinary teaspoonful of pepper to a half pint of boiling water—and repeat it every three hours. Essence of Jamaica ginger of a proper strength is a good substitute. If there is ulceration of the throat, a solution of twenty grains of nitrate of silver to an ounce of water, applied twice a day by a brush or swab, will be found a valuable remedy.

"After the bowels are freely moved by the calomel and oil, it is seldom that any active catharsis will be found necessary during the progress of the disease. Castor oil, or a neutral mixture made by dissolving a Seidlitz powder in four or six large spoonfuls of water, with or without the addition of Rochelle salts—a tablespoonful given every hour until it operates—is as good a laxative as I have found, where there is a hot skin, and as readily taken. In the active stage of the disease the warm or tepid bath will be found a most useful remedy. When the patient is restless, the skin hot and highly colored, with hot extremities, a cool or tepid bath is best—when, however, the extremities are cool, the bath should be as warm as the patient can bear. From five to ten minutes is ordinarily long enough for immersion."

Dr. Fithian relates two cases to show the manner in which he administers the veratrum viride. He gives it in doses of one drop of the tincture every three hours, gradually increased, drop by drop, until its effects are produced, throughout the strictly febrile stage. He thinks that the occurrence of sickness and retching indicate that it has been carried sufficiently far. The heart then gives way—if it does not do so, the specific effect of the remedy will not be likely to ensue. When this specific effect is produced, it is better to diminish the dose of the veratrum a half drop or a drop, but to continue its use until the disease subsides. It generally acts, Dr. Fithian remarks, as a sudorific.

Otorrhœa as a Sequela of Scarlatina.—From a very instructive paper on this subject, with illustrative cases, by DR. L. TURNBULL, of Philadelphia, contained in the *Medical and Surgical Reporter* for April, 1858, we extract the following, which, if not in the exact words of the author, convey accurately his meaning.

Otorrhœa, resulting from scarlet fever, is a disease which, if it be allowed to become purulent and chronic, is very difficult to cure. Such is the statement of every one who has devoted much attention to the subject. In the practice of Dr. Turnbull, one case had existed for thirty-five years, another for twelve, and another, which, before it fell under his care, had been under treatment for seven years. In several other cases the duration was, respectively, one, two, and three years. The profession has not, at any time, been sufficiently alive to the great importance of so treating acute inflammation of the tympanum as to prevent, if possible, the destruction of the internal portion of the ear, and the subsequent otorrhœa. Were the same amount of care exercised in respect to the management of the diseased condition of the ear in scarlatina as of that of the throat, a much smaller number of children would become permanently deaf, or suffer from a destruction of the tympanum, or from chronic otorrhœa of months', or perhaps years' continuance.

Treatment.—In the early stage, when the scarlet fever is at its height, we must endeavor to arrest the acute inflammation of the ear by depletion, but care must be exercised, as this exanthem will frequently assume a low type. Here local depletion, by leeches and small cups, to the mastoid process and antitragus, should be employed as soon as acute pain is complained of. Sometimes the child may be too young to indicate the seat of pain, but expresses his suffering by sudden screams and by crying; pressure at the lower portion of the ear, however, will reveal the cause and seat of suffering. The local depletion should be repeated at intervals, and to such an extent as the strength of the patient will permit, and assisted by active purgation, with jalap, scammony, or senna tea, while, at the same time, we support the child's strength with nourishing diet, etc.

If the case is one that will not bear depletion, or we are called in too late, we must content ourselves with applying counter-irritation, and trying the effects of purgation. Should suppuration have commenced, indicated by a chill, with increased pain, of a darting and throbbing nature, with a sense of bursting in the ear, the meatus, on examination, being of a livid red, and the membrane of the tympanum red and swollen, the best plan is to give discharge to the purulent fluid collected within the tympanum by introducing a delicate cataract needle and puncturing that membrane. This will prevent it ulcerating its way out externally, causing a destruction of the internal ear, or even extending internally to the meninges of the brain, and cause not merely a destruction of the organ of hearing but of life also. Cases are on record in which the ulcerative process extended in such a direction as to open the carotid artery into the Eustachian tube, causing a fatal hemorrhage. The extension of the disease to the brain may give rise, also, to effusion or to disease of the membranes—death taking place from convulsions.

Ototis may likewise take on a sub-acute form, attended with a discharge of a muco-purulent or sero-purulent matter. In such cases the general treatment, which is of the greatest importance, should be directed to improve the condition of the blood by tonics—as iron, quinine, and cod-liver oil—with the frequent use of the bath, or wet towel, with frictions, and out-door exercise in clear weather. The local treatment consists in the application of solid nitrate of silver to the region of the Eustachian tube, every third day, with stimulating gargles, and the use of weak astringent washes for the internal ear, while most active counter-irritation is kept up by blisters, setons, or croton oil, applied over the mastoid region and tonsils. In some of the most unpromising cases the otorrhœa will gradually cease, and the disease may thus be cured; but if the case becomes chronic, then the treatment must be continued for months and even years.

Belladonna as a Preventive in Scarlatina.—DR. J. CHESTON MORRIS, of Philadelphia, relates, in the *American Journal of the Medical Sciences* for April, 1857, the result of a comparative trial made by him at the Foster Home, to test the powers of the belladonna as a prophylactic of scarlet fever.

The number of children subjected to experiment were forty-three; of these nineteen were placed under the influence of the belladonna, and twenty-four took none. Three grains ext. belladonnæ were dissolved in a mixture of half a fluidounce of distilled water, and one fluidrachm of alcohol. Of this solution one drop for each year of the child's age was given morning and evening. The effects produced were generally slight—a little dryness and redness of the fauces, and dilatation of the pupil, with occasionally a little headache, except in one case not included in the nineteen given above, a girl who had had scarlatina severely some years previously, to whom it was administered under an erroneous opinion that she had not had it. She had, from the action of the belladonna alone, a well-marked efflorescence, with slight fever, delirium, and sore-throat. Of those who took the belladonna, eleven had scarlatina regularly, and eight escaped. Of the twenty-four who took no belladonna, eighteen had scarlatina regularly, and six escaped. Of the eleven who sickened with scarlatina while using the belladonna, the sickening happened in two on the 6th day of its use, in two on the 8th, in one on the 10th, in one on the 15th, in two on the 17th, in one on the 40th, in one on the 41st, and in one on the 42d day.

"The last three cases were very mild; the others did not differ in any way from the cases occurring simultaneously in the other children. The last case among the twenty-four who took no belladonna occurred on January 12th, (sixteen days after the appearance of the disease,) while the belladonna cases occurred up to February 9th—forty-four days after the appearance of the disease. The sick children were carefully isolated, the others were mingled without reference to their taking or not taking the medicine, and were in all respects equally exposed. If we reduce the above figures to a per centage, for the sake of comparison, we find seventy-five per cent. of the unprotected were taken with the disease, while only fifty-three per cent. of those under the influence of the belladonna were affected. The difference in the period of incubation is also very striking." Dr. Morris thinks that this result is to be explained upon the supposition that the belladonna prevents, to some extent, the absorption of the scarlatinous miasm. "We know," he says, "that the process of absorption depends to a great extent on the movement of the blood in the blood-vessels—the slower this movement, and the fuller the blood-vessels, the less the absorption; hence the effect of narcotics would be to diminish absorption. Thus, too, the production of intoxication in cases of poisoned wounds prevents the absorption of the poison; and an old domestic prophylactic against marsh miasm was the taking a morning dram; we know also that absorption of miasmata takes place more readily when the stomach is empty than after a full meal. Why? Because, during digestion, the pulse becomes fuller and more frequent. If this explanation be the correct one, any other narcotic should produce quite as effectual a prophylaxis as belladonna. The next question is, should belladonna be given generally to all who are exposed to the influence of scarlatina, and who have not had the disease?" From the small numbers observed by him, Dr. Morris hesitates to answer definitely yes or no. "It is not," he observes, "such a trifle as it has been represented, to maintain even a slight narcotic impression for a month or six weeks, and at every fresh exposure the patient must go through a fresh course of the medicine. Yet where an epidemic is very malignant, or where a hereditary fatality attends the disease in a family, I should recommend the administration as tending to diminish the risk of contracting the disease."

Vaccination.—The following are a portion of the able remarks on the subject of vaccination generally, contained in a report presented by DR. GORDON W. RUSSELL, of Hartford, to the Connecticut Medical Society, at its session for May, 1857, (*Proceedings of the Sixty-fourth Annual Convention of the Connecticut Medical Society.*)

"The propriety of using the scab or crust for vaccination, instead of the lymph taken about the sixth or seventh day, may well be doubted; not but that a good crust, consisting of hardened lymph, will equally communicate the disease, but the difficulties and uncertainty of obtaining a crust consisting of lymph alone, becomes an objection. Frequently the vesicle is broken and the lymph nearly discharged, or in consequence of inflammation, the crust consists in part of dried purulent or semi-purulent matter, which may produce a sore, but not always a vaccine vesicle, and which, if not carefully examined on the fifth day may be thought to be a genuine one. And here I may be allowed to suggest the propriety of testing all cases of primary vaccination, this would afford a sure and perfect guaranty of the protection given by the first. It is attended, I admit, with some trouble, but if the fee is not already remunerative it should be made so. That revaccination is a necessary operation, protecting the system, already wholly or partially exposed to variolous infection, is, I believe, generally admitted, though still denied by some physicians. I confess I have rarely seen a perfect vesicle in a secondary vaccination, when there was already a well defined, punctated scar from the first. I have occasionally seen near approaches to it, varying, however, in the constitutional symptoms, in the appearance of the areola, and of the attendant inflammation. Some of the profession, I know, are reported to have seen it frequently, but I have not been so unfortunate, the nearest approach to it that I have seen this season was in a lady of at least *sixty* years of age, who had been inoculated with variolous matter in Scotland when a child. Of course the crust that is formed during these revaccinations, should never be used for the purpose of producing the vaccine disease. It might occasionally answer, and, of course, it would do so whenever it is the product of a genuine vesicle, but such is so rarely the case that it is safe to lay it down as a general rule that it should never be used.

"There is an interesting portion of this subject, itself alone sufficient for a lengthy dissertation, viz.: upon *the communicability of disease by vaccination;* this demands careful and thorough investigation, both to satisfy ourselves, and quiet the public feeling, which is strongly inclined to believe in its truth. Without denying the possibility of it, I am still somewhat skeptical as to its frequent occurrence, though cutaneous disease may occur after its performance and be the indirect result of it, as vaccination often developes any tendency to disease of the skin which may be present in the system. I can now recall but one instance in which I have witnessed any cutaneous eruption to follow vaccination this season; this was eczematous in its character, and appeared about the tenth or twelfth day of the operation, behind the ears and upon the lower part of the scalp. The child was teething at the time, which was enough, in my opinion, to account for it, and that it was owing to this and not to the vaccine infection, was shown by the same matter being used in quite a number of instances, both before and afterwards, without any such result being produced. If physicians would make a careful record of all such cases that come under their notice, a mass of information would be obtained, which would enable us to dispel many of the illusions of the public.

"The popular notion that vaccination should be repeated at every certain and defined period of one's life is altogether wrong; there can, with reason, be no such course marked out. If, however, the operation was done during infancy, it is proper that it should be tested after the subject has grown up. If anything further than this is done, it must be as much to satisfy the wishes and quiet the fears of the timid, as to comply with any rule indicated by reason or experience."

Foreign Abstracts,

CHIEFLY FRENCH, GERMAN, AND ITALIAN; OR, BI-MONTHLY NOVELTIES IN MEDICAL, SURGICAL, OBSTETRICAL, AND CHEMICAL SCIENCE. BY EMIL FISCHER, M.D.

PATHOLOGY.

I.—*On Ulceration and Perforation of the Diaphragm in Peritonitis.* By DR. E. BONAMY.

A MAN, twenty-seven years of age, was admitted into the Hospital of Nantes for a spontaneous, general peritonitis, which was accompanied by the ordinary symptoms. On the nineteenth day an abscess opened at the umbilicus. On the twenty-second, acute pain was felt on the right side of the thorax. The next day was present frequent cough, expectoration of purulent sputa, more fetid than the liquid which passed through the umbilicus, and having an analogous odor; in the inferior third of the thorax, on the right side and posteriorly there was deep and distinct amphoric sound, which appeared to proceed from the depth of the abdomen; at the same time complete abatement of the abdominal symptoms; abdomen painless and distended, and the discharge of purulent serum through the umbilicus ceased; face contracted. From this moment the state of the patient became daily worse, and death supervened on the twenty-eighth day of the disease. On the previous day it had been observed, that, with each respiration, a loud gurgling in the abdomen was produced, and that bubbles of air escaped through the umbilicus.

On post-mortem examination, the usual characteristics of peritonitis, with pseudo-membranes, etc., were found; the right pleura communicated with the abdominal cavity by a canal, which was formed on one side by the thoracic parietes, on the other by the liver deprived of its capsule, and completed by false membranes; this canal terminated in the pleura by a large opening of the diaphragm; the right lung receded to a level with the seventh rib, and communicated by a broncho-pleural fistula with the purulent collection of the pleura; all the bronchi were filled with pus; the left lung adhered to the diaphragm, which was much reduced in thickness; at the seventh rib, and underneath it, the purulent collection existed, perfectly circumscribed by pseudo-membranous adhesions, and situated between the spleen, the great cul-de-sac of the stomach, and the left extremity of the liver.

M. Bonamy remarks, with reference to this fact, that the inflammation of the tissues, to which the inflamed peritoneum adheres, tends, sometimes, to bring about softening, atrophy, and destruction of these tissues. This result, which a certain chemical composition of the effused liquid contributes, perhaps, to produce, is advantageous, if it effects the escape of the effusion through the umbilicus; and in such a case, this discharge can, in a certain measure, be facilitated by means of dry-cups.

M. Malherbe saw, also, an atrophy of the diaphragm produced under the influence of a peritonitis, as in the patient of M. Bonamy. M. Scoutetten (*Archives de Médecine*, vol. i. 1824,) reported a case, in which the diaphragm was perforated by an ulcerative process, which, however, progressed in an opposite direction from the pleura to the peritoneum. (*Journal de la Société Académique de la Loire Inférieure,* tome xxiv. No. 177.)

SURGERY.

II.—*On Polypus of the Œsophagus.* By PROF. A. H. MIDDELDORPFF, of Breslau.

The interesting monograph of Prof. Middeldorpff on polypus of the œsophagus, contains a complete resumé of the state of the science on this subject. We extract from it the following highly interesting case, observed by the author:—

Jos. Jaensch, born in 1811, lost accidentally, when young, the left eye, and a few years later, the left arm. He afterwards enjoyed good health, abstaining from excess of food and drink, and avoiding, particularly, irritating substances. In the spring of 1851 he contracted a violent catarrh, which rendered him deaf for a long time. A catarrhal inflammation of the pharynx remained, and embarrassed deglutition, particularly that of dry bread; excretion of pituitous liquid between the meals; sensations of pressure at the epigastrium and behind the sternum; painless dysphagia, but gradually increasing, very marked in certain positions of the patient, and accompanied by eructation, cough, and dyspnœa; the difficulty of deglutition daily augmented; finally, the ingestion of liquid aliments was alone possible. During an attack of violent cough, the patient once vomited sanguinolent mucus.

At the end of the year 1852, the trouble of deglutition having reached its intensity, he drank water copiously, and was seized with violent vomiting, during which a body resembling a kidney was raised into the mouth between the teeth. An intense dyspnœa followed. The patient succeeded in swallowing the body in question, and applied for medical aid. When Prof. Middeldorpff first saw the patient he was pale and much emaciated; the finger, introduced into the pharynx to the posterior wall of the larynx, did not come in contact with any foreign body; a probe, of half a finger's diameter, was passed down in the median line, and in directing it to the right side, an obstacle was found, which could be easily overcome, and was not very deeply seated.

On the 14th of January, 1853, Prof. Middeldorpff directed the patient to take a large quantity of warm water and an emetic. During the violent vomiting which ensued, a turgid and violaceous body appeared between the dental arches—this was the polypus. Prof. Middeldorpff seized it with the forceps of Museux, drew it toward the left commissure of the mouth, in consequence of which the difficulty of respiration was somewhat diminished; a ligature of waxed silk-thread was applied over the tumor, at a level with the base of the tongue. The operation was attended with repeated vomitings and great dyspnœa. The polypus was afterwards divided with the scalpel three-quarters of an inch above the ligature; it became turgescent, of purple color, and a great quantity of blood escaped from it; in a short time its color sensibly diminished. The patient afterwards swallowed the pedicle of the tumor and the ligature, the extremities of which were attached around the left ear; the vomiting, oppression, and dyspnœa ceased immediately; the patient felt very comfortable; it was ascertained, on repeated trial, that slight traction at the end of the ligature produced pain. The patient was ordered not to touch the thread, to use fluid and cold food, and to present himself every second day. Nothing remarkable occurred up to the eighteenth day after the extirpation. At this time the loop of the ligature rose into the mouth; it measured twelve millimètres in diameter, and thus encircled a pedicle of about thirty-seven millimètres in circumference. From this moment the troubles of the patient ceased; deglutition and respiration were unembarrassed; the appetite soon revived, and the patient gained in strength and flesh.

Prof. Middeldorpff saw his patient five years after the operation; his health was then excellent; the excretion of pituitous liquid had ceased. On external examination of the neck nothing abnormal was discoverable; a probe of eight lines diameter still met with a slight obstacle at a level with the larynx; in short, the health of the patient was perfectly established.

Examination of the tumor.—The excised tumor measured eight centimètres in length and four in thickness, and weighed about forty grammes; it was cylindrical; its smooth and shining surface presented some inequalities and excoriations which bled easily; it was covered externally by a layer of stratified pavement epithelium; underneath this a layer of conical papillæ was detected; the papillæ were visible to the naked eye, and arranged with great regularity in a spiral around the longitudinal axis of the tumor, and received vessels at their base; underneath the papillary layer the proper substance of the tumor was situated; Prof. Reichert found it, on examination, very vascular, but without nerves; it was composed of connective tissue, in which the cellular elements were still very visible: in other words, a connective tissue not yet arrived at maturity; here and there fat-globules, either free or in cells, were detected; it was, in short, a vascular fibrous tumor, covered with papillæ. By comparing the length of the extirpated portion with that of the remaining portion of the polypus, and by making repeated measurements and explorations in the dead body, Prof. Middeldorpff arrived at the conclusion, that the extremity of the polypus was situated about two inches from the carotid, and that the pedicle was attached at about a level with the larynx. Although these data are merely approximative, they harmonize, in a remarkable manner, with the results furnished by the catheterism.

Prof. Middeldorpff adds, that Dr. John was the first to describe polypi of the naso-pharyngeal papillæ, in his dissertation, *De Polypis Narium;* Varsoviae, 1855. (*De Polypis Œsophagi,* Breslau, and *Gazette Hebdomad.*, Oct. 8, 1858.)

III.—*On Compound Luxations.* By DR. ALBERT SCHINZINGER, of Freiburg.

Dr. Schinzinger gives, in his elaborate treatise, a complete resumé of the views and experiences of ancient and modern authors, and adds to it some original observations of his own. Compound luxations are, according to the author, such in which a perforation of the soft parts has taken place, and they may be complicated by a laceration of larger arteries and nerves. In the first part of the treatise the author gives a detailed report of four cases treated by himself and Dr. Hecker. The following is a short summary of his observations:—

1. *Compound Luxation of the Radio-ulnar Articulation.*—A man fell from a height of thirty-five feet upon the extended palm of his right hand, fracturing the lower end of the radius, half an inch above the joint, and lacerating the radio-ulnar articulation. The articular end protruded through the skin, and a piece an inch in length was removed with the phalangeal saw and Liston's bone nippers. In the course of four months eleven abscesses had formed in the vicinity of the radius; exfoliation of the sequestrum. In the eighth month the patient was so far restored as that the hand and fingers could be extended and flexed.

2. *Compound Luxation of the Knee-joint Forward.*—A man, thirty-five years of age, fell from a bridge into a shallow river. The condyles of the left femur were luxated into the popliteal space, through the lacerated soft parts. Extemporaneous amputation refused; reaction very violent; resection on the twenty-fourth day; cure.

3. *Compound Luxation of the Tibia Forward.*—The patient, forty years of age, fell from a height of sixty feet, lacerating the ligaments and luxating the tibia forward, and the foot outward; reaction moderate. On the fortieth day resection of the articular end of the tibia to the extent of four inches and a half. Cured in four months.

4. *Compound Luxation of the Leg Forward and Outward.*—Laceration of the soft parts; prolapsus of the extensor digitorum communis brevis; protrusion of the fibular end; ankle-joint widely opened, in a girl twenty-five years of age. Resection of the end of the fibula; reposition; gangrene of the soft parts; cure after five months. Two years afterwards she walked on a shoe with a heel one inch high.

In the second part of his treatise the author speaks of the *frequency* of luxation in different joints. Its *occurrence* depends upon the amount of force operating, and upon the character of the joint. *Simple* luxations are frequent in orbicular joints, rarer in hinge joints, and rarest in amphiarthroses; while in the latter the *compound* luxations are more frequent than in the former.

In regard to the *treatment* of compound luxations three questions remain to be decided upon, viz.: whether to reduce, (Paulus Ægineta,) to resect, (Celsus,) or to amputate, (J. L. Petit.)

Before entering into a discussion on this subject, the author describes the *pathologico-anatomical alterations* in the injured parts, and the *reaction* on these as well as on the whole organism, with great precision and detail. Then he considers the *curative results* of the different methods. He finds, in regard to the former point, a striking resemblance between compound luxations and gunshot wounds.

In compound luxations *the consequences of the mechanical force are not expressed merely by the changes of the articular ends, but the amount of injury consists mostly in the propagation of the mechanical influence far beyond the region of the joint.* The articular surfaces of the articulating bones are thrust against each other, slide beyond their facettes and margins, and in consequence of it a contusion is the result; in some places a separation and concussion of the cartilage is produced; this is propagated to the cells of the bony tissue lying immediately underneath, and is followed by infiltration of blood into the same, and the consequent changes. The periosteum is separated from the bone for a distance, the capsule of the joint torn to shreds, the ligaments severed from their insertions, and often a piece of bone broken off. The muscles and tendons in the immediate vicinity are driven asunder by the head of the bone pressed against them; are crushed in some places, and have their fibres torn. Now the skin, stretched to the utmost extent, bursts, the bone protrudes through an irregular, lacerated, gaping wound; comes in contact with air, dust, sand, etc. In consequence of the laceration of the soft parts blood is effused into the cavity of the joint, and infiltrates the muscles and cellular tissue; violent pain and feeling of uselessness of the limb accompany these occurrences. The feeling of strangulation and nausea Larrey endeavors to explain by the injury of the branches of the sympathetic. The joint is numb, and even the whole body stunned; the brain and nervous system received a shock, circumstances which favor the occurrence of gangrene. The local as well as general reaction must necessarily be violent.

After the author has fully considered the circumstances which render the injury so serious, the reaction so violent, and the reduction so difficult, he lays down the *indication for reposition* in the following words: "Reduction is only to be attempted in quite recent cases, if the bone lies yet in the depth of the wound, if the laceration is incomplete, and the bone has remained for the greatest part in its normal connections, or if only a few lines of the articular end are projecting, and this can be brought back without dragging or bruising the soft parts. It is to be remarked, that compound luxations of smaller joints, such as fingers and toes, are frequently followed by tetanus."

In reference to *resection* the author observes that already in ancient times this operation had been proposed or executed, but it was, as Velpeau remarks, practiced chiefly from want of knowledge how to arrest hemorrhage, in order to avoid amputation, but not with the clear comprehension of the principle involved, and of the humane object to save a limb. It was left to the scientific zeal, and humane tendency of some physicians of the second half of last century, to establish more decided indications for the operation, and to introduce it again to the notice of the profession. In England it found its methodic inventors in White, Parke, Crampton, etc., in France its zealous imitators in Moreau and Roux, in Germany in Textor, Jæger, and Fricke.

The most valuable contributions to the already richly endowed chapter on resection, we owe to Prof. Ried, (On Resection of Bones,) and to the industrious statistical researches of Malgaigne.

Making extensive use of the existing literature, the author considers *resection of the particular joints in reference to their statistical results.* The most successful have been resections at the *shoulder-joint,* (Le vrai triomphe de la resection c'est quand on la pratique sur la tête de l'humerus ; *Gazette Médicale,* No. 16, 1858.) More difficult, and attended with less success, proved to be resections of the *elbow-joint ;* they were, however, at all events, much more favorable than the results of simple and of forced reposition. In the same way the author shows conclusively the superiority of resection at the other joints of the superior extremity over forced reposition and amputation.

He was, however, not so able to defend the use of resection in injuries of the lower extremities. particularly of the *knee-joint,* against the objections of many distinguished surgeons. Sanson, Pétrequin, and before them Guthrie and Dupuytren, and nearly all surgeons of Germany, condemn resection of the *knee-joint,* as it exposes life to greater risk than amputation. Ried, alone, prefers resection to amputation, and has quite recently found approval and imitators among the English surgeons. Jones collected thirty-three resections of the knee-joint, of which five were fatal, and twenty-six terminated in recovery; and since 1830 it was executed in Germany about thirty times, in almost every case on account of *caries* and *necrosis.* Resections after *traumatic injuries* terminated most unfavorably, and they were therefore limited to only a few cases ; four of which have been recorded, and proved fatal.

The advantages of resection in complicated luxations of the *ankle-joint* are proved by many cases, and the mode of proceeding was accurately laid down by Cooper. The presence of only one of the articular surfaces will often preserve motion to the limb. Cooper is particularly favorable to the resection of the inferior ends of the tibia and fibula, as he never observed an unfavorable issue of the operation.

In complicated luxations of *the astragalus,* total extirpation of the same is the best measure ; statistical reports testify in favor of it by large numbers ; Malgaigne quotes eight cases ; Turner collected in England forty-six cases, among which were eighteen of total extirpation ; of these only thirteen recovered with ability to move the limb. Broca recorded fifty-two cases, of which forty-two ended favorably. Still more encouraging are the known results of resection in compound luxations of the *smaller joints.* The author takes then occasion to speak of the experiments of A. Wagner, on the process of healing after resection of bones, and draws some conclusions particularly in reference to the prognosis of the operation.

The treatment recommended by the author after resection is as simple as rational, and modeled according to the therapeutical axioms of the Vienna school. He speaks with particular praise of the "Railroad Apparatus" of Prof. Dumreicher.

Finally, he considers the question of *amputation.* He calls this measure the *ultima ratio* in compound luxations, and advises it only as a last attempt to save the life of the patient.

The author states the advantages of resection over amputation very clearly in the following points:—

1. The duration of the healing process is much shorter than in reduction.
2. Very dangerous symptoms are avoided, such as muscular contractions, reproduction of the luxation, tetanus, gangrene, articular suppurations of long duration, caries, and necrosis of the articular ends.
3. The proportion of fatal cases is very moderate.
4. Motion is, in the majority of cases, preserved.
5. The operation is less dangerous, and of easy execution.
6. Consecutive amputation is rarely necessary after resection, while it is often required after reduction.
7. Finally, the moral impression of an amputation, compared to that of a resection, is worth consideration, particularly if the amputation of the limb must be performed in the moment, where the patient is overcome by prostration, pain, etc. The idea of preserving a limb, merely shortened a few lines, reassures the patient, consoles him, and makes him bear pains and affliction better.

Dr. Schinzinger's treatise pleads energetically in favor of conservative surgery, and, although it does not bring many new facts or arguments, it is highly interesting as a faithful collection and critical exposé of the experiments made and views entertained, up to the present time, on the subject of compound luxations. (*Die Complicirten Luxationen*, von Dr. A. Schinzinger, Privatdocent an der Universität Freiburg. Lahr: Verlag von Schönberg & Co., 1858; pp. 53.)

OBSTETRICS.

IV.—*On the Puerperal Diseases observed in the Charité of Berlin.* By PROF. VIRCHOW.

Puerperal diseases had prevailed in the Charité, without cessation, from the autumn of 1856, to the middle of March, 1858, during which time eighty-three fatal cases occurred. As in the epidemic of 1846-47, the frequency and severity of cases was greater in winter than in spring, a circumstance in which puerperal fever differs from hospital gangrene, which occurs particularly in spring. According to the author's opinion, it is possible that this aggravation is owing to a concentration of the miasmata in the wards, ventilation being only sparingly used for fear of producing colds.

In two cases only the very insignificant local changes were in no proportion to the severity of the symptoms; but it must be remarked, that these cases did not coincide with the maximum intensity of the epidemic, and that both patients had already, previous to their confinement, suffered with nervous symptoms. The rapidly fatal termination was thus not attributable to an intense alteration of the blood, but perhaps to a special predisposition of the nervous system. Acute endocarditis was observed in a large number of cases; it affected particularly the mitral valve, and produced in its tissue a peculiar softening and small crevices. Twice the fragments, detached from the valve by the current of blood, had produced obstructions in the capillary vessels and circumscribed foci of inflammation; in one of these cases small purulent collections were found in the muscular tissue of the heart, in the kidneys, the spleen, the liver, and both eyes; the uterus was normal. In the centre of these abscesses, as well as in a small artery, fragments of the mitral valve were found by chemical analysis. Similar anatomical changes were observed in four cases. From this circumstance, Prof. Virchow draws the conclusion, that the heart is frequently the point of issue of these so-called metastatic abscesses, and that, in a certain number of cases, they are the consequence of capillary embolia, and not of pyæmia. One of the patients succumbed suddenly to softening of the heart; it is, therefore, necessary to examine this organ attentively in every case where the state of the abdomen does not account satisfactorily for the gravity of the symptoms. In a patient who had suffered with hemiplegia of the left side, the veins of the arachnoid of the right hemisphere were obliterated by clots, and a great part of the cerebral substance was œdematous, and had ecchymotic spots disseminated through it. These lesions were, however, exceptional; in most cases peritonitis was present, and was often exclusively observed. It was found in two different forms; the first was superficial, and the exudation, either plastic or purulent, was deposited on the surface of the peritoneum. In the other much severer form the subserous areolar tissue was implicated, and transformed into a detritus mixed with pus. This form is identical with the diphtheritis of the internal surface of the uterus, which most frequently occurs on the surface of insertion of the placenta.

The uterus was inflamed only in one case; the inflammation was very extensive, and had terminated in gangrene. Inflammation of the ovaries was more frequent, and also assumed two forms analogous to those of the peritonitis. In one there existed a superficial hyperæmia, followed by abscesses in one or more follicles, and consequent effusion of pus into the peritoneum; in the other, a diffuse inflammation of the parenchyma was observed, producing considerable swelling and softening of the ovary.

Some stages of the epidemic were characterized by the frequency of phlebitis, nearly always accompanied by metastases, which Prof. Virchow ascribes to embolia. The angioleucitis was, on the contrary, rarely complicated. Prof. Virchow explains this difference by the arrest of the migrating particles in the lymphatic glands, where they become a source of inflammation.

The inflammation of the vessels is most frequently the consequence of ruptures of the perineum, of the vagina, and of the neck of the uterus, and is often complicated with extensive gangrene of the areolar tissue in the true pelvis and iliac fossæ. Prof. Virchow observed a case of this kind at Würzburg, in which the retro-peritoneal inflammation extended from the organs of generation upward to the diaphragm. (*Monatschrift für Geburtskunde*, xi. 409.)

Bi-Monthly Periscope.

SURGERY.

1. ON THE THEORY OF THE PRODUCTION OF HERNIA. By *Professor Roser.*—The views here advanced have already been published by Professor Roser, seventeen years since; but as they have not excited the attention he believes they deserve, he reproduces them with the advantage of being able to add, that all subsequent investigation during so long a period of an active career, has only confirmed his conviction of their truth.

Debating with a celebrated professor of surgery, he declared that a sudden production of a hernia was impossible, according to the laws of mechanics. The professor maintained the possibility, inasmuch as he had examined persons who had shown no signs of hernia, and yet, after violent exertion, its presence had become manifest. This, Roser regards not as observation, but as a *post-hoc* conclusion. It is well-known how difficult (or when small, impossible) it is to detect an empty hernial sac. We only recognize it when the intestine has entered it, and we can feel the impulse on coughing, etc.; but when such entrance is prevented by various circumstances, the most we can say is, not that no hernial sac, but that no hernia, is present. Why is it not possible, as Scarpa and Cloquet have shown, to produce a hernial sac on the dead body by the use of violent compressing power, aided by apertures made in the tendinous walls of the abdomen? First, because the peritoneum is not sufficiently elastic to bear the necessary extension; and, secondly, because compression of the soft and fluid contents of the abdomen acts by hydrostatic law; and although the peritoneum may be stretched, it is not thrust out as it is found to be in hernia, and as it may be to some extent by the finger locally applied.

Professor Roser advances these two propositions, that femoral hernia arises from the dragging out (*Herauszerrung*) of the peritoneum, and that external inguinal hernia, or more properly its sac, is almost always congenital. First, with respect to *femoral hernia*, the dragging out of the peritoneum is brought about by nodules of fat, which, appertaining to the sub-serous tissue, are firmly attached to the peritoneum. These nodules slide between the fibres of the *septum crurale*, thrust them asunder, and lead to their disappearance. The anterior part of the nodule passes out under the plica, covered only by *fascia superficialis*, and increases in size. Its movements are favored by its pyriform shape, and by the motions of the body, and the peritoneum following it, a sac is gradually formed. In all the instances of commencing hernia the author has had the opportunity of examining, he has found such fatty nodule at the apex of the sac. We cannot expect to find this in old or large herniæ, as it would disappear under pressure. Professor Linhart of Würzburg, the only anatomist who has of late years investigated the subject of hernia, has confirmed these views, stating that he believes that traction exerted on the peritoneum exerts far more influence in the formation of hernia than the pressure exerted by the contents of the abdomen.

External Inguinal Hernia.—The valvular character and oblique course of the inguinal canal, should have formed a sufficient reason for rejecting the ordinary theory of the formation of this hernia. All subsequent investigation has convinced Professor Roser that his statement made long ago, that this hernia is almost always congenital, is correct. He has found that the *hernia vaginalis funiculi*—*i.e.* an open state of the upper part of the vaginal process—occurs much oftener than is supposed. It has been found in almost all the children the subjects of inguinal hernia, whom he has examined; and he has frequently met in adults hernial sacs so long and narrow, that they could only be regarded as incompletely developed vaginal processes of the peritoneum, into which intestine had not passed. He has also found the anatomical signs, detailed in his former treatise, exhibiting the congenital nature of the affection. Other coexisting anomalies of the peritoneal formation are often met with. Besides the descent of the testis, there is a descent of the cœcum and sigmoid flexure, and disturbances of these often occur at the same time. As the author has found in almost all the outer inguinal herniæ that he has examined, such grounds for considering them congenital, he has come to the conclusion that the bulk of cases regarded as accidental do not merit the appellation, inasmuch as the sac has been in existence prior to birth. He refers in confirmation of his views to Camper's statement, that of sixty-three full-timed children in whom the testis had descended, the vaginal canal was obliterated only in seven, it being open on both sides in thirty-four, on the right side alone in fourteen, and on the left side in eight. So, likewise, Professor Engle, whose investigations are now publishing in the *Wien Wochenschrift*, states that in children at birth, or during the first fourteen days afterwards, the vaginal canal is found oftener obliterated, or at least considerably shorter, on the left than on the right side—a fact agreeing with the preponderence of hernia on the right side. He found the canal entirely closed at birth in ten per cent. After fourteen days no trace of it could be found on the left side in thirty per cent., while it remained open on both sides at the end of fourteen days in sixty per cent. In the adult the presence or the remains of the vaginal canal was observed in thirty-one per cent. of the bodies examined, on both sides in 37·5 of these, and on the right side alone in 62·5.

Outer Inguinal Hernia in the Female.—The author long since proposed the question to Professor Meyer of Zurich, whether women were not liable to a similar descent of the peritoneum as men; and that writer, in a paper in Müller's *Archiv*, has shown that in the female as well as the male fœtus, a projection of the peritoneum into the inguinal canal does take place. Its metamorphosis, however, occurs much earlier, as soon as the fifth month; and it is also less considerable, and therefore less liable to disturbance than in the male sex.

Internal Inguinal Hernia.—This, Professor Roser observes, may, in some cases, have a fatty origin, like femoral hernia; but he believes that other cases arise from a local protrusion of the peritoneum, in aged and relaxed subjects, in whom a partial atrophy of the *fascia transversalis* has taken place. This is a very different thing, however, to the sudden production of hernia usually admitted. He believes with respect to internal inguinal hernia, that the fact that it occurs almost exclusively in aged men is not generally known. It takes place indeed much oftener than most authors admit; and may be almost said to be as frequent in old men as femoral hernia is in old women. The much greater narrowness of the ring is the reason it does not occur often in old women.

Umbilical Hernia.—This is the only hernia which is produced according to the old theory, viz., by a *vis a tergo,* and even here the author suspects that in some cases it may arise from a congenital protrusion of the peritoneum, remaining from the fœtal state. As this hernia differs in the mechanism of its formation from other kinds of hernia, so does it in the remarkable fact of its being generally spontaneously curable, as may be seen from the small number of cases met with in the adult, compared with the large number occurring in infancy. In aged and fat individuals, accidental hernia of this form is, however, frequent.

Originally commencing his investigation with a purely scientific object, Professor Roser has since found that it has an application to legal medicine, the question not unfrequently arising, whether a hernia has been produced in consequence of acts of violence in scuffles, assaults, &c., and the culprit risking to be dealt with too harshly in consequence of the off-hand way in which the affirmative is pronounced.—*Arch. für Physiol. Heilk.*, 1858, pp. 60–70. (*British and Foreign Medico-Chirurgical Review*, Oct. 1858.)

2. SYPHILIZATION; ITS MODE OF PERFORMANCE AND ITS RESULTS. By *William Bœck, Professor of Medicine in the University of Christiania, etc.*—M. Auzias Turenne, as early as the year 1844, made various attempts to transfer syphilis from man to the lower animals; at length he succeeded, and by repeating his experiments in the same animals, he observed that they at length became inured to the syphilitic virus. He called the condition so obtained "syphilization;" and on the 18th November, 1850, sent a memoir detailing his observations to the Academie des Sciences. M. Sperino of Turin, immediately made use of the discovery of Auzias Turenne, for the purpose of curing syphilis by continued inoculations. A great many successful experiments, commenced in the month of January, 1851, convinced him of the possibility of its efficacy for the purpose in question;* and, on the 23d of May, 1851, he laid his first communication upon the subject of syphilization before the Medico-Chirurgical Academy of Turin. In the same year, I was traveling through the northern part of Italy; I did not, however, visit Turin; but in Milan I heard a great deal about the successful experiments of M. Sperino.

As long experience had taught me the uncertainty of the treatment hitherto directed against syphilis, I believed it not only allowable, but even a duty, to give a trial to a new remedy, even if at first it looked somewhat incredible. The matter being mentioned in our Medical Society after my return, I started the question, whether any objections could be offered to my making essays with this new method of cure, when these were made only on individuals suffering from constitutional syphilis. My colleagues agreed with me as to the propriety of the experiments under the condition named, and, accordingly, I began my practical investigation of the subject of syphilization as soon as I was able to obtain some inoculable viris, which was not, however, till the month of October, 1852, from which time my first inoculations are dated. From that up to the present date, I have syphilized more than 200 individuals. Concerning my method of syphilization, and the results obtained from it, I shall now proceed to give a short account.

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* From Auzias Turenne's *Cours de Syphilization*, p. 14, we see that he too had experimented on men, but this he had not previously published, and it was therefore unknown to Sperino.

As I have already said, I only consider syphilization indicated where there is *constitutional syphilis;* because I am not quite certain that the primary syphilis (thus introduced) will not occasion a constitutional syphilis; and I have no right to bring into the body a virus that was not there before.

I begin the syphilization by taking the matter from a primary ulcer, but not caring whether it is simple or indurated. One may very well syphilize with matter from either, and nothing perhaps will better prove that the supposition as to the complete difference, which latterly (by Ricord, Clock, Basseron, etc.) has been seen to exist between the matter from the simple chancre and from the indurated chancre, is groundless. However, it is not my intention to say that all syphilitic virus is of the same nature. On the contrary, experience has taught me that there is a great difference in the intensity of the matter, and also in its syphilizing virtue. The virus taken from a primary ulcer I inoculate in the same manner as I inoculate the vaccine; and if I wish as much as possible to avoid great ulcers and cicatrices, I make the first inoculations in the sides of the trunk. Hitherto I have generally put three in each side. After three days there will be pustules; from these I now take matter for making a new inoculation, which I put at a distance of two-third inches from the first one. In this way I continue inoculating every third day, always taking the matter from the last pustules, as long as it is possible with this matter to produce *any* effect.

In observing the series of inoculations that are made, we will find that the ulcers, after the first inoculations, are the largest ones; then those of No 2; and thus they diminish after the order in which they are made, until at last there only come aborting pustules. One might believe this to be occasioned by the intensity of the virus having diminished; but we will be convinced that the reason is in the inoculated individual himself, by taking the virus that is of no more effect upon him and applying it to another individual, when it will be seen to produce great pustules.

The first virus not making any more effect when the individual has grown inured to it, matter from another individual will, however, prove inoculable. But the first pustules and ulcers that come forth after this second matter will not nearly be so large as those from the first matter. If we will now take a third matter, it will also bring forth pustules and ulcers, but still smaller ones, and still fewer in number, than those from the second matter; and at length we come to the point, when no matter applied in the sides produces any effect.

Still, however, there is yet no general immunity. If I were to inoculate the thighs with a new matter, or with the last matter that no longer produces any effect in the sides, I am always sure to see there a positive effect. I am generally accustomed to inoculate at the same time on the thighs and the arms; and

I go on in the same manner as I have described on the sides, until also on these places I come to the point when no matter that I can obtain will have any effect. If it is of no importance whether or not I call forth large ulcers and cicatrices, I begin the inoculations on the arms and the thighs. On the arms, the pustules and ulcers will be of the same size as those on the sides; but on the thighs they will be larger, and the series of inoculations may be a very long one. Having, by continued inoculations in these places, attained the result of no longer producing any effect, if we were now to try to inoculate on the sides, we would have no effect at all, or at least a very insignificant one.

From these results of syphilitic inoculation, I think there are four points that are interesting to observe, and that are of great importance as physiological facts:—

1. The artificial chancres on the sides and on the arms are always smaller than those on the thighs, and the series of inoculations shorter.

2. By continued inoculation the ulcers always become less and less, until at last the inoculation gives a perfectly negative result.

3. The inoculated individual grows inured to one matter, but is still receptive to another, yet in a lower degree; and again, to a third one, but in a still lower degree; and so on till no further effect is produced by any matter.

4. Immunity having been obtained on the sides and on the arms, it will still be possible to have a rather long series of inoculations on the thighs; however, we will always be able to observe plainly the influence of the inoculations previously made on the sides and on the arms, inasmuch as the ulcers that come forth on the thighs will not be so large, and not so many, as when the inoculations have been commenced on them. If one has begun by inoculating the thighs until immunity has been produced there, the effect of the inoculations subsequently made on the arms and on the sides will be comparatively insignificant.

All these phenomena are constant; they will not be seen in one individual, and missed in another; they will always show themselves. We have here an invariable law of nature.

We see that the inoculations make a general effect upon the organism. This is most decidedly shown to us by the three results last mentioned. If the organism was not influenced from the absorption of the inoculated syphilitic virus, we would be unable to explain to ourselves the fact, that the later inoculations are always less efficacious than the earlier inoculations. Soon after the introduction of syphilization, the opinion was propounded, that all depended upon the derivative effect of the artificial ulcers, which were only to be considered as little fountains. Such an opinion was rather likely to be uttered at that time, but by repeating it at the present, it only proves a perfect want of acquaintance with the subject of syphilization. It is impossible to keep such an opinion after having followed the progress of one single syphilization.

But, can it perhaps be the case, that the organism, by the repeated use of general derivative remedies—such, for instance, as tartar emetic—grow inured also to this remedy? From what I have heard, however, from those who have tried to heal syphilis by such a derivation, this has not been the case.

Now, if the diminution by degrees of the ulcers of inoculation in one or other part of the body, should not be found sufficiently evident, I should think the fact that, after the immunity has been produced by inoculations on one part of the body, the receptivity is less on another part, does not permit any doubt as to an absorption having taken place. It is evident, that the state of the organism is no longer *the same* as before the inoculation. But what may not be doubted is explained wrongly by those who will not observe for themselves, or will observe with prejudiced opinions. For them it is of no use even to prove that, as I have said before, by continued inoculations, we come to the point when no matter will any longer produce any effect. They affirm hardily that there does not exist any immunity, and that all that has been done is mere fancy. They see very well, that, if they were able to prove this, it would be proved also that there was no probability as to there having been any absorption of the virus, or as to an altered state having taken place in the organism. If by continued inoculation the result is immunity to the syphilitic virus, syphilization obtains some analogy with vaccination, and with the acute exanthemata in general. This *a priori* looked absurd; and some did not hesitate to deny its possibility, before they were convinced by personal observation. Only after having uttered this prejudice they began to experiment; and then, of course, the experiments proved what had been found out in the study. It was forgotten that these experiments might be repeated by others, and that such incorrect observation would, in a short time, be discovered. The formation of more than 2000 chancres, without the production of immunity, has been spoken about; but it has been communicated to me that, in this case, the pustules, as they came forth after the inoculations, were always cauterized, so that, if this is true, they thus prevented the absorption, and changed the syphilitic ulcers into common ulcers; and, I have no doubt, they might continue inoculating in this way to all eternity, without effecting any immunity. Further, they have, where the inoculation, undertaken in the usual way, the same as in vaccination, did no longer give any result, sent the syphilitic virus far in under the skin, and filled the opening with cotton, or they injected the virus into the cellular tissue. There is nobody, I suppose, who doubts of this having caused a suppuration; but nobody will doubt, also, of this being the way to call forth a suppuration, by applying any purulent matter whatever in a similar manner.

With such facts they have endeavored to annul observations made with the greatest exactitude, and repeated in several hundreds of cases.

It would not, however, be possible to make the question of immunity doubtful, even for ever so short a time, if there were not circumstances that came to the assistance of inexact and superficial observers; and such are certainly to be found.

I have before observed, that when an individual has grown inured to the matter first applied, still a second, a third, a fourth, and perhaps a fifth matter will give a positive result; the effect, however, of every subsequent matter being fainter than that of the preceding, and the ulcers becoming less and less, until at last there are no more characteristic ulcers,—only insignificant excoriations. And while, in the first inoculation, the matter could be brought through scores of repetitions, we will not at last with a new matter be able to produce more than one single ulcer by repeating the inoculation with it. Now, it happens in some syphilized individuals, that we may several times inoculate with a new matter and only bring forth small pustules, which will soon dry, and which may truly be named abortive. If we take the small quantity of matter they sometimes contain, and inoculate the same individual with it, we shall have a perfectly negative result.

To those who observe with exactitude, these facts are very easily explained; it is only those who have not studied syphilization, and followed the steps of the process, who think it wrong to speak of immunity as long as a new inoculation will perhaps give a positive result.

This, after all, is only a dispute about words. I have employed the word immunity, because it was employed by Auzias Turenne, and Sperino, and I am no friend of making new words when I can help myself with old ones; but if, after what I have explained, this word should be found to be incorrect, it is no matter to me if they chose another.

The question is, whether the organism, after the completion of the syphilization, is still in the same state in respect to the syphilitic virus as before; and to this, everybody who has observed with judgment, will answer—" No;" and the difference between the condition of the organism in respect to its immunity to the syphilitic virus, before and after syphilization, is so great, that I assure those gentlemen who have opposed this fact, and denied its existence, that within a short time, when more persons have deigned to examine the important question more closely, and make experiments, they will be left alone with their opinions. Whether this alteration of constitution proves that the syphilitic virus no longer exists in the organism at all, I dare not say with certainty; on the contrary, we see from facts I am going to mention afterwards, that the virus exists in the body, at least for some time after immunity has been obtained,—but how long, is still a question.

There is yet another question that has often been put, viz., How long does the immunity last? Does it last for the whole life, or only for a time,—and then for how long? We know that the acute exanthemata generally do not attack the organism more than once; that a successful vaccination preserves for many years; and that variolæ, if they come after vaccination, are considerably modified. Whether there exist similar conditions after syphilization, we must confess we are yet ignorant.

I have been reproached for not having made experiments in that direction. But when I had cured my patients, I considered that I had no right to inoculate them anew; just as much as I do not think it right for me to inoculate healthy persons with the syphilitic virus. In some cases, however, especially in those persons who were suffering from incurable maladies, cancer, etc., and whom I had syphilized experimentally, I have made new inoculations some time after having finished the syphilization. The result of these has been absolutely negative; or, perhaps, after some time there have come forth very small pustules and ulcers, the matter of which could only be propagated through one single, or a very few ulcers more. If I made the new inoculations after the lapse of months, I could only transmit the effect through some more sets of ulcers; but there was never the least comparison between this and the earlier effect of the inoculations; the ulcers never became extended; and the *altered* state to which the organism had been brought by the earlier inoculations was so clearly proved that it was impossible to misjudge it.

There are two questions that have often been confounded, viz., the first concerning the existence of immunity; the other concerning its duration. I positively insist upon these two questions being entirely separated from each other. It is an indisputable fact, that by repeated inoculations, we reach the point where we cannot produce any more effect by the inoculation. This fact is equally remarkable, and equally important, if the immunity attained were only to last for a day, or even for an hour. This physiological fact merits our whole attention, without any regard to the duration of the state attained. If the immunity is of no duration, then it will only prove that it would be possible again to be attacked by syphilis. But as he only gets syphilis who exposes himself to it, the cessation of immunity to this malady will not be of the same importance as it would be in the case of the acute exanthemata, which we get in spite of ourselves. I do not, however, by any means intend to say that the insignificant series of inoculations that may possibly be made after the completion of the syphilization proves that the immunity has ceased, and that a new general infection is possible. But as the new series of pustules and ulcers is in every respect very insignificant, so I think the syphilis that might be caught in the ordinary manner, would also be of no great importance, and, in my opinion, would not occasion any evolution of constitutional syphilis. But it is far from my meaning to anticipate experience; it alone will be able to decide with certainty this question; and even if the effect of syphilization should not always continue for the future, we must confess, I think, that its effect upon the present forms of constitutional syphilis is so great and beneficial, that we may be satisfied with that alone.

I now proceed to speak of the effect of syphilization upon constitutional syphilis. And, in the first place, I shall make the observation, that we must make a great difference between those cases which have not been treated previously and those which have been treated, especially if they have been mercurialized. For only in the cases where no mercury has been used, does syphilization show its real and uncomplicated effect.

When we make the inoculations in the manner above described, we sometimes, in from four to six weeks, observe some influence for the better on the symptoms present; but this improvement is generally of no duration;—fresh eruptions will appear, and the whole phenomena will seldom have disappeared till after three or four months. As to the time required for the treatment, the nature of the phenomena present is of importance. From the experience I have gathered in about one hundred cases, it seems evident that, where the skin is occupied to no great extent by the syphilitic eruption, the effect of the inoculations, in respect to the local production of pustules and ulcers, as well as to their influence upon the organism in general, is more regular. In the more unusual cases, where the skin is entirely occupied by the eruption, especially in the papular form, the inoculation is often difficult. The first series of inoculations generally go on in the usual way—it is not generally, however, very long; but new matter, although employed for some time, makes little or no impression. Under these circumstances, we must wait, if I may so express myself, till the first series has produced its effect upon the organism, and the eruption consequently has begun to disappear; then we observe fresh inoculations have better effect, and the disease diminishes accordingly. In consequence of the slow effect of the inoculations in the latter class of cases, the treatment will perhaps last even six months, or more. This is a long time; but if an individual, suffering from severe constitutional syphilis, can be assured of *certain* cure in about six months, I think it must be allowed that this time is well employed. Immunity having been produced, and the symptoms existing at the beginning of the treatment having disappeared, new symptoms generally show themselves, especially sores on the mucous membrane of the mouth, or a fresh exanthematic eruption, or iritis. These new phenomena disappear without any treatment being directed against them; even the most intense iritis will pass away completely without our meddling with it at all. I let the patient remain in a light room, without any screen for the eye, or go out, if he chooses. I allow him to eat and drink what he likes, and employ neither internal nor external medicaments; and the result, in all the cases I have so treated, has been quite satisfactory. The inflammation ceases, the eyeball grows movable, and the patients have never had their vision impaired. In some cases, small effusions of lymph have taken place, but they have occasioned no marked disturbance of sight.

These new phenomena may also occur during the process of syphilization; I then treat them just as when they come afterwards;—I take no notice of them whatever.

Syphilization may be practiced at any age. I have treated very young children after the same method, and with the same happy results as in grown-up persons. In children, the pustules and ulcers are much smaller, and their receptibility to a great number of chancres very much less; the time required for treatment, also, is often shorter.

From the results I have hitherto obtained from syphilization in those who have not been previously mercurialized, I venture to affirm, that *in no disease have we a more certain method of cure.* When to this is added, that the patients, during the treatment, as well as afterwards, are quite comfortable, that they may eat and drink whatever they like, and attend to their business, and even, if there is any suffering from the constitutional vice, the state of health is improved, I think it should satisfy all the expectations we by any means can form of it.

The circumstances are not the same when mercury has been used before. Having tried syphilization in about one hundred cases of this sort, the following are the chief results of the treatment:—

1. The local effect of the inoculations is not so uniform as when mercury has not been used; it may even cease entirely after some time, and not begin again till a few doses of iodine have been given.
2. The effect upon the syphilitic symptoms present, also, is not so uniform.
3. Syphilization does not seem to have any, or at least any considerable, influence upon affections of the osseous tissues and derangements of the nervous system, occurring after syphilis.
4. One is often obliged to combine the use of iodine with syphilization, in order to obtain a complete cure.

5. Relapses are not unfrequent after syphilization in individuals previously mercurialized.

6. These relapses, however, will never have a form worse than that which existed before the syphilization: they will always, so to speak, be a fraction of the earlier affection.

7. The state of health always improves during the syphilization.

It will be seen from the above-mentioned details, that, although it is often impossible to do everything with syphilization in those who have been previously treated with mercury, yet even in such cases we obtain very much better results than by any other treatment whatever. It is a duty, therefore, in these cases also to use this treatment. But it is not, as some persons have believed, especially in these circumstances that syphilization ought to be employed—only when all other remedies have failed. Syphilization is the remedy against syphilis, but not against depraved syphilis—that produced by improper and pernicious remedies, especially mercury. It is the first and not the last remedy in constitutional syphilis; this point we must insist on, in order that it may be understood that it is not necessary to empoison our patients with mercury before proceeding to cure them.

Perhaps I ought to demonstrate more fully my assertion as to the insufficient and pernicious effect of mercury on syphilis; but in an Edinburgh journal it will be unnecessary, as I know that my opinion of this remedy is approved in Scotland.—*Edinburgh Medical Journal*, April, 1858.

3. EXCISION OF THE TONGUE FOR CANCER. By *James Syme, Esq., Professor of Clinical Surgery at the University of Edinburgh.*—There are few diseases more painful to suffer or more distressing to witness than cancer of the tongue. The concurrent testimony of all experienced practitioners is decidedly unfavorable to operative interference by removal of the diseased part from its never affording permanent relief, and generally exciting, instead of retarding, the morbid progress, while all the means of palliation are extremely uncertain and inefficient. In circumstances so desperate any practicable measure affording a reasonable prospect of relief would certainly be warrantable; and under this impression I have lately tried the effect of extirpating the whole organ. As the disease frequently exists for a long while without extending beyond the tongue, and yet rapidly reappears after the affected part has been cut freely away, there seemed reason to think that if the whole texture showing this disposition to morbid action were removed the patient might escape future trouble. Some reports had reached me of this having been done by cutting into the mouth under the chin, and then completing the operation by means of either a knife or the écraseur. But feeling assured that it was impossible to accomplish the object fully and satisfactorily through the imperfect access thus afforded to the root of the tongue, I resolved to divide the jaw at the symphysis, and then draw the two halves aside so as to get room for accurate dissection and ligature of the vessels.

G. S——, aged forty-seven, a shoemaker, was admitted into the hospital on the 11th of November, 1857, suffering under extensive cancer of the tongue, which was diseased throughout its whole extent, except toward the root. He stated that only five months had elapsed since the commencement of his complaint, or, at all events, since his attention was first called to it. There was no glandular swelling, or any other sign of disease.

On the 9th of December I made an incision through the lip, and extended it down toward the os hyoides, then sawed through the thick part of the symphysis, and completed its division by cutting pliers; next had the two halves held aside while I dissected backward, so as to cut and tie the lingual arteries near the cornu of the os hyoides, and finally detached the tongue closely from the body of this bone. The edges of the wound were then brought together, and the patient walked stoutly to bed. Food was supplied by the injection of milk and beef-tea through a tube introduced into the œsophagus, and everything went on so favorably for several days that I entertained no doubt as to the patient's recovery. But on the fourth day he began to complain of uneasiness in his chest, had a quick pulse, and became feeble. These unpleasant symptoms rapidly assumed a still more serious aspect, and terminated fatally on the seventh day. On dissection, the wound, larynx, and trachea were found in a satisfactory state; but the lungs were thickly interspersed with small indurations indicative of recent inflammatory action.

In considering this case, I felt at some loss to determine whether the fatal issue had necessarily resulted from the operation, or was owing to circumstances that admitted of prevention. The patient was ascertained to have been addicted to habits of intemperance. The wound had been healed throughout its whole extent, so as to leave no room for the escape of discharges from the fauces, and from an early period after the operation experiments had been tried on the power of deglutition with the effect of exciting a great deal of sputtering and cough. It seemed not improbable that, but for these unfavorable circumstances, the operation might have proved successful, and, therefore, although certainly having no great desire to repeat it, I did not feel entitled to decline doing so should a proper case present itself.

A few weeks ago I received an application from the hospital at Northampton to admit a patient, who appeared a very suitable subject for the purpose. He was fifty-eight years of age, a remarkably respectable, healthy-looking man, without the slightest sign of glandular disease. He had suffered for nearly six years from disease of the tongue, and in the early part of last spring had undergone an operation by ligature in the Northampton Hospital. In consequence of the disease returning, he afterwards went to London, (Guy's Hospital,) where no operation was performed, but some strong applications were employed. He then went home, with the tongue greatly swelled, and diseased throughout its whole extent, except toward the root, where the texture retained its ordinary characters, so far as could be ascertained by the finger.

On the 31st of July I performed the operation precisely as on the former occasion; but instead of closing the wound throughout its whole length, left about an inch of it open at the lower part, and inserted a piece of lint to prevent adhesion. I also directed that no food should be given except by injection through a tube. Again things went on favorably for a few days, and again I entertained sanguine expectations of success; but on the evening of the third day, symptoms of the same alarming character as in the first case showed themselves, so that next day I saw there was no hope, and felt prepared for the fatal result, which took place on the following day. On dissection, the air-passages were again found free from signs of disease until they reached the lungs, where there were extensive indications of recent inflammation.

In both of these cases it was manifest from inspection of the mass removed that no other operation could have accomplished complete extirpation of the tongue, and unless this were done, no better result could be anticipated than from the partial removal, which has always been found so useless and objectionable. On the other hand, I felt satisfied from the similarity of the symptoms and result, that the operation, if not certainly fatal, must be one of extreme danger; and as even in the event of success, the permanency of relief would still admit of question, I think there should be no hesitation in deciding against the repetition of this procedure. In promoting the progress of surgery, it is hardly of more consequence to determine what is expedient than to ascertain what is not expedient; and I venture to hope, that the experience now related may not prove useless by saving others from the disappointment which I have myself experienced.—*Lancet* August 14, 1858.

[In addition to the cases of Mr. Syme, we extract the following letter from the Paris Correspondent of the *Medical Times and Gazette* for September 4th, 1858:]—

The following short notes of a case in which M. Ricord removed, at the Hôpital du Midi for lingual cancer, the entire organ as far as that was possible with the écraseur alone, may be of some interest to our friends at home at a time when the attention of the medical public is directed to the propriety or impropriety of the entire removal of this organ for cancer by so great an authority as Professor Syme, who, having lost his two cases in precisely the same manner as M. Sedillot lost the first patient upon whom he had performed exactly the same operation some years ago, and who, failing with all his skill and boldness to obtain even a temporary success, comes forward like a courageous gentleman, and holds up his cases of failure as a beacon to the profession at large; and now openly avows his concurrence with the testimony of all experienced practitioners as to operative interference being decidedly unfavorable in these cases, the removal of the diseased part never affording permanent relief, and generally exciting instead of retarding the morbid progress.

About the month of March of the present year, or at any rate, at the time of the last fall of snow, M. Ricord had in his wards a patient with cancer of the tongue, who had been variously treated by caustics, but was at that time in such a condition that his very existence was a misery. He was totally deprived of speech, and had completely lost the faculty of taste, excepting, as M. Ricord remarks, "le goût de son propre fruit." In such a state of suffering was this poor fellow, that he allowed the rather unwilling operator no rest until he had performed his duty.

This was effected in the following manner: the tongue seized with the vulsellum, and drawn forcibly forward, a strong curved trochar was passed from side to side, (or, speaking of the tongue, from edge to edge,) and as far back as possible; the chain of the écraseur was then passed behind the trochar, and the "écrasement" effected very slowly, one notch per minute; however, in spite of this extreme slowness of the crushing process, the operation was followed by some amount of hemorrhage; this, nevertheless, was arrested by cramming the mouth with snow-balls soaked in the perchloride of iron.

All went on well during the first fortnight, so that at the end of that time he had not only recovered the faculty of taste, so as to be able correctly to distinguish the difference between cabbages and lentils, and the like different dishes forming the fare more or less sapid and sumptuous of the hospital; but he had likewise become the orator of the ward, speaking French with sufficient ease and fluency, although he would probably have been somewhat puzzled to pronounce the pure linguals of the English language.

About this time he was exhibited to the assembled Academy; and presenting in the submaxillary region some slight induration with glandular engorgement, M. Velpeau pronounced his opinion that this was evidence of a return of the affection. This opinion, however, was combated by M. Ricord upon the grounds that the glandular engorgement was more easily and hopefully explained by the supposition that it depended upon a retention of the salivary secretion, owing to the ducts having been included in the operation; he inclined to this opinion, inasmuch as the engorgement made its appearance very suddenly and equally on either side. The diagnosis of M. Ricord proved the correct one; the engorgement, after having attained an enormous extent, gradually subsided. But now arose another and unexpected accident; as cicatrization progressed the contracting cicatrix laid a tax upon all the surrounding parts; what little was left of the tongue, previously mobile, and capable of modulating the vocal element, was so drawn upon and forward that it became by degrees immobile, again depriving the patient of vocalization. But this was not all; the still contracting cicatrix now began to affect more distant parts; deglutition, from less and less facile, became more and more difficult, until we fear that inanition might have subsequently become a serious, and even fatal complication, had not the case been suddenly cut short by a latent attack of pneumonia at the commencement of the past month. The pneumonia was not suspected, owing to the absence of expectoration and other outward and visible signs. This may be excused, owing to the fact that all attention was directed to the obviation of the imminent ultimate result of the interference with the function of deglutition.

The necroscopy discovered no evidence of cancerous return; the salivary glands, pharynx, and œsophagus were perfectly normal; the mucous membrane of the larynx slightly indurated, this organ otherwise healthy; the lungs a perfect specimen of red hepatization; other organs normal.

From the above case we should not decide formally with Mr. Syme in his veto against the future performance of this operation, but we would reiterate the opinion and views of your Scottish Tourist. For the future we should dispense with the indispensable ligature left in order to prevent the patient from swallowing and strangling himself with the remainder of his tongue, and we should, in searching for the cause of this constant pneumonia, seek to obviate the accidents so imminent in this case.

On the other hand, we have other cases of a more happy termination. The other day, (August 9th,) for example, we saw a case in which more than two-thirds of the tongue had been removed by the écraseur two years previously; the patient presented a specimen of even ruddy health, although the tumor removed by M. Chassaignac was reported as cancerous.

We have seen M. Maisonneuve remove the entire tongue, after having previously divided the lower jaw at its symphysis, by means of a chain-saw, and completing the operation either by means of scissors or the écraseur. He looks upon hemorrhage as quite a secondary consideration. The presentation of patients having undergone the entire removal of the tongue before l'Académie de Médecine is a sufficient guaranty that the operation is not in itself necessarily fatal. And also from our own observation we can assert that in the cases of M. Maisonneuve, the operations seen by us were, we may say, well supported, although we have now lost sight of the patients, and have no note of the ultimate results. We have noticed considerable difficulty in keeping the divided surfaces of the jaw in direct apposition; and in order to obviate this inconvenience M. Sedillot suggests that the maxilla be divided by two oblique lines meeting in the centre, so that one end fitting into the other they may be of mutual support.

4. DISPLACEMENT OF THE TESTICLE INTO THE PERINÆUM; PLASTIC OPERATION UNSUCCESSFUL; CASTRATION. Under the care of *R. Partridge, Esq.*—Benjamin S., aged twenty-four, was admitted into King's College Hospital on April 30th, under the care of Mr. Partridge, on account of displacement of the left testicle into the perinæum. It appeared that he was a soldier in the Horse Artillery two years ago, and that he was thrown forward, while riding, on to the pommel of the saddle, and received the injury for which he was admitted. He fell from his horse, and vomited for some minutes. Next morning he observed a swelling in the perinæum about the size of a hen's egg, and so painful that he could hardly move about. He then went into the military hospital, and was under treatment for about three months, but without benefit; the testicle only gliding further backward in the perinæum till it reached its present position—about an inch in front of the anus. The testicle had diminished in size, and was smaller than the right. The vas deferens could be distinctly felt. He sometimes had difficulty in passing urine; but at others it flowed easily. He was quite unable to work.

May 19th.—An operation was attempted for the purpose of replacing the testicle in its position. The patient was placed in the position for lithotomy; a transverse fold of skin was pinched up over the testicle in the perinæum, and divided. A band of fibrous tissue which restrained it (perhaps the remains of the gubernaculum) having been divided, the testicle was pushed up toward, and as much as possible into, the scrotum, and retained in its place by deeply placed subcutaneous sutures, and by a pad and bandage in the perinæum.

June 1st.—The wound was gradually healing. The patient complained of pain in the course of the spermatic cord.

June 14th.—It is noted that the testicle had gradually slipped back into its old position, and that the patient feels as much pain there as ever. As it seemed hopeless to attempt again the reduction of the testicle, it was determined to remove it. Accordingly, on June 19th, the patient was again brought under the influence of chloroform, and an incision was made on the spermatic cord. This was then taken up, a ligature placed on it, and the testicle removed. The ligature came away in a few days, and the patient is now convalescent. The testicle was, we believe, examined after removal, and found atrophied to some extent from pressure and injury, but otherwise healthy.

Remarks.—We have not met with any other instance of this injury—dislocation, as it may be termed, of the testicle. It is, in fact, one of which it is difficult to conceive the possibility in a perfectly natural condition of the testicle and its appendages, on the one hand, and of the scrotum, and other soft parts, on the other; and it was on this account that, in this case, some irregularity was suspected in the original conformation of the parts, Mr. Partridge having expressed his opinion that the gubernaculum had had an unusual attachment which predisposed the testicle to pass down below its natural level. One thing seems plain, viz., that the testicle must have been in its usual place just before the accident, otherwise the patient could hardly have done duty as a horse-soldier. The treatment followed was undoubtedly judicious, and would probably, if another such case should occur, be more successful. In this the communication between the scrotum and perinæum appeared to be too free to allow any chance of closing it by operation, and the testicle was producing an amount of misery in its new position which rendered it useless to think of leaving it there. —*British Medical Journal*, July 10, 1858.

PRACTICE OF MEDICINE.

1. PRACTICAL OBSERVATIONS ON CARDIALGIA. By *Professor Fenger.*—Professor Fenger states that this disease is of very frequent occurrence in Copenhagen, especially among the maid-servants. It is also a frequent symptom in other diseases, and then being of varying severity and combined with numerous other symptoms, may not take the leading rank. Among such diseased conditions are various fevers, inflammatory affections of the chest or abdomen, cholera, and other diseases, attended with great discharges, various nervous affections, as hysteria, epilepsy, tetanus, and some forms of mental disease. In these cases the cardialgia disappears as the original disease diminishes, and at most calls for palliatives. Not infrequently, also, where the cardialgia appears as a leading symptom, it is found to be masking other diseases, the true seat of which may be in other parts of the body. Thus, it is a frequent symptom in chlorosis, and acquires sometimes such severity as to be the chief one concerning which the patient complains. The pain in such cases is not usually continuous, and is relievable by palliatives; but sometimes it is very obstinate, returning again and again, until a long course of iron has been administered. Of all the preparations of this, the *ferrum desoxydatum,* two to four grains three times daily, in the form of pastille or chocolate, is the best. In *acute poisoning* by caustics, metallic substances, or narcotics, cardialgia is a very common symptom, and in *chronic poisoning* by arsenic, lead, etc., it may constitute a leading one. It is also very common in chronic alcohol poison. In all such cases a rigid diet, long main-

tained, and the absolute prohibition of alcohol, does the greatest service, especially if the patient can keep his bed the while. Cardialgia is observed in many of the dyscrases, especially *gout*, constituting with nausea and vomiting a dangerous anomalous form of the disease, which has been regarded as a metastasis of gout to the stomach. Chronic disease of some organs at a distance from the stomach may give rise to cardialgia, the proper symptoms of these being so slight as to render the diagnosis difficult; and disorders of the functions of the *uterus* are especially liable to induce it. Whenever the cardialgia is combined with much leucorrheal discharge we must always well examine the condition of this organ. When the cardialgia seems connected with anæmia and menstrual disturbance, the *tinct. ferri muriat.* is very useful. It is sometimes a symptom of *hysteria;* but it is an error to consider it often as a hysterical disease.

In the male subject cardialgia is sometimes a symptom of *onanism*, and then it is distinguished by its severity and obstinacy. When the symptoms of onanism are not quite decided, a bougie should be passed, a practice which few onanists can bear, owing to the suffering it causes. When great pain and irritability is thus shown, and no stricture or gonorrhœa is present, it is an excellent sign of onanism having been practiced for some time. Dr. Fenger, in these cases, applies the nitrate of silver to the urethra. Cardialgia is also met with in chronic diseases of the *kidney;* and in all obstinate cases, accompanied by wasting and want of appetite, the condition of the kidney should be inquired into. It is a frequent masking symptom in affections of the *chest*, and especially in the chronic form of phthisis in the aged. In diseases of the *brain* and *spinal marrow*, there are usually characteristic symptoms besides the cardialgia; but sometimes, in disease of the spine, the pain at the epigastrium or side is so great as to draw off attention from the spine itself.

Although, as seen above, the *digestive organs* are not necessarily the seat of disease in cardialgia,—in most cases they are so. Blows on the epigastrium, as also any diseased conditions that lead to altered position or forced traction of the stomach, may give rise to obstinate cardialgia. It may also result from compression by adjacent organs, as in various diseases of the viscera, pregnancy, or distention of the intestinal canal by air or excrement. This last is a more frequent cause of the affection than is suspected. Organic diseases of the stomach are usually attended with cardialgia.

Finally, there are cases of cardialgia, in which the most careful examination fails to detect any other disease, *idiopathic cardialgia*. As Huss has already shown, this is one of the most common diseases among the common people of Sweden, and indeed throughout the North of Europe. In Copenhagen, it is especially met with among maid-servants; and the want of sufficient nutriment, and the too great use of brandy and coffee, to which Huss assigned the prevalence of the disease, cannot be attributed to them. One of the principal accompaniments is the excessive *epigastric sensibility*, which in some cases even continues during the absence of the pain. The author has often found the affection following, in maid-servants, great bodily exertion, especially of the muscles of the arms, as in washing, lifting heavy bodies, etc.; and he believes the pain is often seated in the nerves of the muscular parietes of the thorax. However this may be, in these cases, mere repose in bed for a week or fortnight suffices for a cure, even without medicine; or the same end may be obtained by putting one arm in a sling, and forbidding all exertion. In the severest cardialgia, in connection with chlorosis, such repose in bed is highly useful. When such rest is impossible, and the pain is severe, sinapisms or flying blisters are of use, employing leeches or cupping when spinal irritation is present. Another accompanying symptom is a *spasmodic contraction of the abdominal recti muscles*, which is sometimes constant, and at others is produced by touching the epigastrium. When this is supposed to be due to inflammatory irritation of subjacent organs, blood-letting is indicated; but when this is not the case, hot bread poultices give remarkable relief. *Epigastric pulsation* is another very common symptom in cardialgia; but Dr. Fenger has been unable to make out any determinate connection between it and the causes of the cardialgia. It occurs in both sexes and at different ages, and in the most diverse forms of the disease. It usually indicates obstinacy of the affection. When severe the patient should keep in bed; and local bleeding, the long maintenance of superficial suppuration, and the internal use of morphia are very useful. Another symptom, just as common and as enigmatical as this, is a *vaulting of the epigastrium outwardly.* As a general rule, the patients complain that they cannot bear the pressure of their clothes. Sometimes the symptom is only transitory, as after eating, during constipation, or during severe paroxysms of pain; but in other cases it is almost always present. The vaulted form, usually confined between the umbilicus and sternum, sometimes extends very much farther. Dr. Fenger does not admit that it is a tympanites, for it may remain for months uninfluenced by great discharges of wind. The aggravated form of the disease is infrequent, and chiefly occurs in combination with hysteria, in young women whose sexual functions are retarded.

Our treatment of cardialgia must be guided by our knowledge of its cause. Among the palliatives, ethereal and balsamic medicines are, according to the author, of no use; and he has no very great opinion even of bismuth given in doses of from five to ten grains, four times a day. There is little certainty either in the operation of nux vomica or strychnine, hyoscyamus or the aqua laurocerasi. In certain cases all these means are useful, but it is difficult to determine which are the cases. Where the pain takes on at all an intermitting character quinine is useful. Where the pain comes on daily at indeterminate times, and is attended with great prostration of strength, and from its continuance, with ill effects upon the general health, the author has found the nitrate of silver of use, commencing with one-eighth of a grain three times a day. When cardialgia is connected with vomiting after meals, and is not dependent on organic disease, a rigid diet constitutes the best treatment, and many cases have been relieved by giving milk alone, the patient only taking small quantities, and keeping in bed. Where hyperæmia of the stomach is present, local bleeding or derivatives should be employed.—*Schmidt's Jahrbücher*, band 97, pp. 317–322. (*Medical Times and Gazette*, Nov. 13, 1858.)

2. ON THE TREATMENT OF CROUP. By *Dr. Luzsinsky.*—Dr. Luzsinsky, Medical Director of the Children's Hospital at Vienna, after animadverting upon the discrepancy of opinion which prevails concerning the nature and treatment of

croup, observes that it is essentially an inflammatory affection of the mucous membrane of the air-passages. Still, it is not a mere local affection of these, inasmuch as croupy exudations are also often found upon other parts of the external or internal surface; so that it arises from a peculiar condition or *crasis* of the blood giving rise to pseudo-membranous deposits, and is a mere local expression of a general diathesis. The spasm, which plays so important a part in the disease, is a secondary condition excited by this inflammation.

Speaking of the symptoms, the author observes that the true croupy tone, bearing the most striking resemblance to the barking of a young dog, once heard can never be forgotten. Some practitioners state that this peculiar cough is proper to certain children in every catarrh, and Mauthner says that the cough in short-necked children easily takes on this croupy character in simple bronchial catarrh, as also in children suffering from worms. These statements Dr. Luzsinsky has never been able to verify during fifteen years' observation of many thousand children. The warning given by the child's hoarseness and croupy tone is too often overlooked by friends and practitioners, or many more children might be saved.

The following are the indications of treatment:—

1. *To act upon the peculiar crasis of the blood.*—This is indeed unconsciously done by almost all the means that have obtained renown, as they all agree in the final effects of diminishing the plasticity of the blood. This is the case with mercurials, antimonials, sulphate of copper, and liver of sulphur. The influence of these latter articles, however, as solvents and alteratives, is too feeble, while their emetic properties in the early stages of croup produce mischievous concussion of the brain and larynx. Mercurials have the disadvantage of exciting diarrhœa or salivation, and when employed to a sufficient extent to operate upon the crasis, may themselves produce a mischievous contamination of that fluid,—a mercurialismus. Alkalies, on the other hand, without being accompanied with any of the above disadvantages, possess great fluidifying power over albuminous and fibrinous products. They have been long employed in diseases depending upon a hyperplastic condition of the blood, and were recommended strongly by some of the older writers in pleuropneumonia and croup. Dr. Luzsinsky published in 1855 and 1856 an account of the excellent results that followed his employment of carbonate of potash; and since then these results have been confirmed by other French and German practitioners. Nevertheless, the old practice of leeching is still continued by the great bulk, and is followed by a mortality of from sixty to seventy per cent. Caustic potash is the form of alkali which of all others most strongly possesses the antiplastic power, but even in the highest state of dilution it proves too irritating to the digestive organs. As a carbonate it is far milder in its operation, and can be administered in large and long-continued doses. When continued too long diarrhœa and excessive fluidity of the blood are the results if it be not suspended. Soda is milder both in taste and influence; and the bicarbonates are only suitable for slight cases. The doses of the carbonate of potass or soda are from one-half to ʒii per diem, dissolved in water and sweetened with syrup. The alkali is continued until the cough becomes easier and looser, when usually a plastic, puriform mucus is expectorated.

2. *To prevent the localization of the inflammation in the larynx.*—For this purpose it has been the habit to apply leeches. How little was to be expected from this may be judged of from the extremely slight connection that exists between the blood-vessels of the skin and those of the mucous membrane of the larynx. The author regards depletion of any kind as injurious; and at the recent meeting of the German physicians at Bonn, the younger practitioners all were found to hold the same views. Cold would seem *a priori* the best means for preventing or suppressing this inflammation; and Lauda has frequently found the hydropathic application of this successful. Dr. Luzsinsky also, in former years, frequently resorted to this, which, however, requires great precautions in respect to the accompanying diseases, the individual constitution of the patient, and the prejudices of the friends. The best means of applying cold is by keeping the base of the neck, as low down as the sternum, covered with cloths wetted in cold, and afterwards in iced-water, keeping the rest of the body warm, and assiduously administering small quantities of cold milk and water. This practice is to be continued for from one to three days, when the cough becomes looser and the respiration easier. The cold is then to be gradually decreased, and more nourishment administered. Warm cataplasms are very objectionable, encouraging determination of blood to the parts affected, obstructing the breathing, or rendering the child liable to chills. Reasonable and useful as is the application of cold, invincible obstacles are sometimes offered to it, and we must then resort to derivative applications in the form of blisters, placed just above the sternum. To this means the author attaches great importance. The surface of the blister soon becomes covered with the diphtheritic membranes. When these appear and have frequently to be removed it is a good sign; while when they are absent, and the secretions from the blistered surface defective, the child is usually lost.

3. *To relieve the spasm of the larynx.*—For the relief of the spasmodic symptoms exhibited by the distressing cough, the impending suffocation, and the great restlessness, opiates are of great service. They are so especially at the commencement, by relieving the severe cough and procuring repose for the larynx.

4. *The destruction or expulsion of the pseudo-membranes.*—The destruction of the pseudo-membranes has been attempted by means of various caustics; and of all these, the author has found the nitrate of silver of the greatest service. A solution of eight to sixteen grains to the ounce should be carefully applied by means of a pencil, several times a day, as low down toward the larynx as possible. When the false membranes begin to loosen and separate in the larynx, or when this is filled with plastic mucus or puriform membrane, and the child, unable to expectorate, is threatened with suffocation, emetics, which at an early stage can only do harm, are now indicated; of these the author prefers the cupri sulph., giving from two to eight grains in two ounces of water and one ounce of syrup, in teaspoonful doses every quarter or half hour, until vomiting is produced. If the carbonate of potass has been employed at an earlier stage, the vomiting will usually cause the discharge of plastic puriform mucus, or, more rarely, of pseudo-membranes.

A child treated according to these indications, freed from its croup, requires little after-treatment beyond diet; and recovers much more rapidly than when he has been weakened by bleeding, emetics, and purgatives, and his juices have become impregnated with mercury. As to tracheotomy, the author has no personal experience, and evidently he does not think well of it.

While during three years among 15,000 cases of children's diseases Dr. Luzsinsky met with but 30 cases of croup; in another three years he met with 60 cases among 23,000 patients. This he attributes to the reputation his successful treatment of the disease had acquired for him. Of these 90 cases, 55 occurred in boys, and 35 in girls, and the ages were as follows:—Under one year, 11 cases; from one to two, 16; from two to three, 16; from three to four, 8; from four to five, 9; from five to six, 15; from six to seven, 14; and nine years old, 1. With respect to the severity of the symptoms, these cases may be divided into three groups. The *first* is characterized by a hoarse voice, by a short, rough, barking cough, difficult respiration, indistinctness of respiratory murmur, with occasional whistling, more or less fever, and constancy of symptoms. The 36 cases of this group all recovered, because the disease was energetically attacked from the commencement. It is a class of cases calling especially for attention, because it often follows measles and influenza. Great care was taken in ascertaining that these were cases of true croup; and that every case exhibiting hoarseness with a rough cough and fever was not so designated, is shown by the fact that 100 cases were left unnoticed, under the designation catarrh of the larynx. The *second* group is distinguished by a weak, thin, screeching voice, a soundless, tubular cough, labored respiration, a very feeble and hissing respiratory murmur, and great restlessness. In forty-three patients the narrowing of the larynx had reached this point. It comprehended partly cases in which the early symptoms had been disregarded, or had not yielded to the means employed, and partly those in which the most suitable means, promptly applied, failed to check the progress of the disease. Of these cases nine died and thirty-four recovered. In five of these the friends utterly neglected the means advised. The *third* group is marked by loss of voice, mere whispering remaining, a dry, suffocating, scarcely audible cough, and a high degree of orthopnœa, the respiratory murmur being inaudible, and strangulation seeming imminent. In this condition were eleven cases, of which five recovered and six died. The disease had proceeded with such rapidity as to leave no time for the operation of remedies, or the pseudomembranes had already formed when the children were brought in. In three of the recoveries suffocation seemed imminent, and the children were only saved by the active employment of the nitrate of silver.

As the general result of the ninety cases, seventy-five recovered and fifteen died. In the first stage of the disease, all the thirty-six recovered; in the second, thirty-four of forty-three; and in the third, five of eleven. The conclusion to be drawn is, that the treatment should be prompt and active, before the crasis of the blood has become completely developed, and the inflammation localized.—*Journal für Kinderkrankheiten*, band xxix. pp. 155, 176.

[In a subsequent number of the *Journal*, (b. xxx. p. 209,) Dr. Hauner, Director of the Children's Hospital at Munich, enters into a criticism upon Dr. Luzsinsky's opinions, and concludes his paper with the following aphorisms, which, in a forthcoming work, he intends developing at full length:—1. True croup (laryngeal croup) is a disease proper to childhood, and its cause is chiefly to be sought in the organization (the period of development) of the larynx at this period of life. 2. The anatomy and physiology of the larynx sufficiently explain the nature of croup. 3. It cannot be shown that croup is connected with any peculiarity of the blood-crasis. 4. True croup always commences in the larynx, and often passes downward to the trachea, etc.; but it never passes upward. 5. Laryngeal croup is characterized by a pseudo-membrane of more or less extent. 6. Laryngeal croup is to be carefully distinguished from diphtheritic croup, the latter always depending upon a peculiar blood-crasis, as seen in other organs of enfeebled individuals. 7. Diphtheritic croup is almost always secondary, and is not essentially different from croup in and after acute exanthemata. 8. The diphtheritic form begins, as a general rule, in the fauces, uvula, tonsils, etc., and extends hence downward. It is very rare for it to commence in the larynx or trachea. 9. A laryngeal catarrh may simulate laryngeal and diphtheritic croup very closely, but in it there is no formation of pseudo-membrane. 10. Such cases are very frequently mistaken for true croup. 11. There is no specific remedy in true croup, the treatment having to be adapted to the individual cases. 12. Emetics, cold, blood-letting, mercury, etc. are the means, adapted to special cases, that must be relied upon. 13. In certain cases of true croup an operation is desirable. 14. Diphtheritic croup requires for its treatment cauterization, emetics, alkalies, and corroborants; but calomel, bleeding, blisters, or purgatives should never be employed. 15. Tracheotomy is seldom advisable, especially on account of the liability to return of the diphtheritic process. 16. When performed it must be followed by cauterization. 17. The severest laryngeal catarrh yields, as a general rule, to antiphlogistics and suitable regimen. The favorable results obtained in many such cases have been set down as examples of the cure of croup.]—*Medical Times and Gazette,* August 7, 1858.

3. On the Introduction of a Tube into the Larynx in Croup. By *M. Bouchut.*—M. Bouchut has laid before the Académie de Médecine a proposition to treat croup by introducing a silver tube deep into the larynx. Having ascer. tained the facility with which this may be done upon the dead subject, he put the practice into force in two cases of membranous croup brought into the Sainte Eugénie Hospital during the virulent epidemic that has reently prevailed in Paris. He employs three descriptions of instruments: a small curved catheter, open at both ends, as a director for the tube; a straight cylindrical tube, one and a half or two centimetres long, furnished at its upper part with two projecting rims (one placed around its orifice and the other at six millimètres below) and pierced with a hole for the passage of a retaining silk; and a protecting sheath for the index finger or dental dilator. Having ascertained on passing the tube in the subject that it entirely entered the larynx, its upper margin being placed below the superior corda vocalis, the inferior corda fitting into the space between the two rims of the canula, and consequently above the lower rim corresponding to the internal surface of the cricoid cartilage, M. Bouchut employed it in the case of a little girl brought in with diphtheria and croup in the stage of asphyxia. The canula remained *in situ* during thirty-six hours without induc-

ing suffocation or intefering with the functions of the epiglottis, and the symptoms of asphyxia disappeared. The larynx was thus freed from the obstructing false membranes, and the croup must be considered as having been cured. The child, however, died from the diphtheria and from a lobular pneumonia set up the night after the tube was introduced. The second case occurred in a boy three and a half years old, in whom symptoms of asphyxia had commenced. Improvement soon took place, false membranes of a large diameter being discharged through the tube, which remained *in situ* during forty hours, with the exception of one temporary removal, and never becoming displaced during coughing. At the end of this period, the fits of suffocation and asphyxia, which had been kept off for two days by means of the tube, returned; and the Internes, believing death to be imminent from obstruction occurring below the glottis, performed tracheotomy. Some false membranes were thus removed, and the tube was found to have remained in its place unobstructed.

M. Bouchut considers that these two facts establish—1. The facility with which tubage of the glottis may be performed by fixing a canula on the lower cordæ vocales, which does not interfere with the functions of the epiglottis. 2. The tolerance of this tube by the larynx. 3. The possibility of relieving the asphyxia of croup by this means in preference to tracheotomy. 4. The facility with which large pseudo-membranous concretions formed in the trachea and bronchi may pass through this intra-glottal tube. 5. The utility of this new resource for surgeons residing in remote localities, destitute of all assistance.—*Union Médicale*, No. 110. (*Medical Times and Gazette*, Oct. 30, 1858.)

OBSTETRICS.

1. ON ALOES ENEMATA IN UTERINE CATARRH. By *Professor Aran.*—Of the numerous discharges which take place from the genitals, some have their seat in the vulva and lower part of the vagina, others are furnished by the upper parts of the vagina and by the mucous membrane of the cervix uteri, and others again proceed from the interior of the uterus. This is not a mere anatomical distinction; for the discharges having different seats are far from resembling each other, either in regard to their causes or the resistance they offer to treatment. The vulvo-vaginal discharges are usually connected with a perpetic influence, but they sometimes depend, especially in the young, upon the presence of ascarides in the rectum or vagina, or upon the practice of bad habits. Kept up by the friction of the opposite surfaces of the vulva and vagina, they are rapidly relieved when the irritated surfaces are kept separated from each other, and dusted with some inert powder.

The discharges which proceed from the upper portion of the vagina and the os uteri are generally connected with congestion, irritation, or inflammation of the uterus or neighboring parts. If we subdue such irritation, the discharge will subside of itself without any special treatment. The discharges furnished by the interior of the uterus are far from being of this simple character; and, by the admission of all practitioners, what has been termed *uterine catarrh* constitutes, in its chronic form, one of the most obstinate, not to say incurable, affections that can affect the uterine system.

According to the particular point furnishing the secretion, the catarrh exhibits very different appearances. Sometimes it is a liquid as transparent as water, but slightly viscid; sometimes it is a highly viscid, gelatinous, albuminous, transparent or opake mucus, streaked with white, gray, or yellow; and sometimes, again, it approaches more or less in its character to those of purulent secretions. These differences have been noted by all who have employed the speculum, but no one has pointed out the precise point at which these various secretions take place. M. Aran's numerous observations have shown him that the highly viscous, albuminous mucus always proceeds from the cavity of the cervix; and on the dead body we can trace into the crypts of the cervix numerous filaments, which united together form the large flakes, resembling white of egg, which are spread generally over the lower lip of the cervix, and thence into the vagina. The aqueous mucus, whether clear, sanguinolent, or even puriform, is furnished by the cavity of the body of the uterus. These two kinds of mucus present the characteristic peculiarity of being alkaline, while that furnished by the vagina and os uteri is always acid. Becoming mixed with the natural or increased secretion of the vagina, the complex discharges known as leucorrhœa are produced, consisting of more or less viscous secretions, according as they contain more or less of the mucus of the cervix, and more or less of a white or yellow color, according to their combination with the epithelial secretion of the vagina, or with pus derived from this canal or from the cavities of the uterus. Leucorrhœa whenever it is abundant is never furnished exclusively by the uterus, the secretion, from whatever part of its cavity it proceeds, being always slight. The secretion may take place regularly at certain hours in some patients, who are apprised of its occurrence by colicky pains; but it is never in sufficient quantity to give rise to the true "whites." It thus must be admitted that abnormal secretion of any importance cannot take place in the uterus without being followed by increased vaginal secretion; whether this arises from simple consensus, or whether the mucus secreted by the uterus directly stimulates the vaginal mucous membrane into increased action.

Every one acquainted with this affection is aware of its obstinacy, especially when it has continued for some time. Doubtless, in many cases, the resistance to treatment is explained by the presence of some lesion of the uterine appendages. An oophoritis, a chronic inflammation of the tube, or a partial peritonitis may too frequently keep up the irritation which maintains the catarrh; but in other cases, in which there is no reason to suspect such complication, the discharge is no less obstinate, and relapses with such facility as to drive both patient and practitioner to despair. Chance has of late years led M. Aran to the discovery of the means of curing, if not all, at least a great number of these cases, although he is far from wishing to substitute it for all other measures heretofore proposed—too many resources in so obstinate a disease not being in fact possible. After trying in vain to cure an obstinate case of amenorrhœa with chloroanæmia, he determined to put into force Schonlein's treatment, which consists in the repeated administration of small enemata, composed of two and a half drachms of aloes to an ounce of mucilage. The amenorrhœa did not yield to this, but an abundant leucorrhœa, to which the patient had been subject for several years, entirely disappeared. His attention having been struck by this fact, he tried the same remedy under various circumstances; and the practice he now approves of is to administer (every day, or every other, according to the effect produced) first an enema of mere tepid water and then one of the following composition: aloes, Castile soap, āā gr. 75 ad gr. 150; boiling water, ℥iij. In the same proportions of the vehicle he experimented with colocynth, gamboge, rhubarb, jalap, scammony, etc. etc.; but the definitive result was much in favor of the aloes, as being the only drug that could be continued for several days together without inducing severe pain in the rectum and anus. Even the aloes itself has at last to be discontinued, in consequence of the irritation and tenesmus it produces. In very sensitive persons an injection may be given every other night for a week or a fortnight; while in the less susceptible, the injection may be employed every night—bedtime being the time always chosen. If the remedy is likely to prove favorable, the discharge is at once found to be daily diminishing. In some it diminishes by a half within twenty-four hours, and in others all traces have disappeared after from four to six days; while in a few, although improvement takes place, the cure is not complete. The most striking cases are those in which the uterine catarrh, after being treated by the most varied means with very indifferent success, completely disappears after five or six days' employment of the enemata. When, however, any traces of inflammation, much congestion, or exaggerated uterine sensibility, has been present, the aloes enemata have not only entirely failed, but they have notably aggravated the case. Neverthless, when the congestion or irritation of the uterus has been dependent upon some morbid processes in its vicinity, then the enemata exerts still a powerful influence over the catarrh. It is remarkable that both the aloes and some other substances, strongly purgative when taken by the mouth, exert comparatively but little effect of this kind when given as an enemata. Administered at night, they are retained until morning, and sometimes for twenty-four or even forty-eight hours; and the stools they do induce are not attended with much pain or irritation.

Although these enemata afford a certain amount of relief in the other vaginal discharges, M. Aran is not aware that a single case of vulvo-vaginal or vaginal discharge has been cured by them, however perseveringly they may have been employed, their revulsive action being strictly confined to uterine catarrh.—*Medical Times and Gazette*, Sept. 18, 1858.

2. ON THE PREVENTION OF LACERATION OF THE PERINÆUM. By *Mattei.* (*Vierteljahrsschrift, f. p. Heilk.*, 1858.)—Dr. Mattei gives the following views on the means of preventing laceration of the perinæum. It is especially necessary that the head pass the vulva in a favorable direction. This can only happen when it passes with the necessary degree of flexion. While the occiput passes under the pubic arch, the face has not yet quitted the pelvic outlet; first when the upper part of the neck comes under the pubic arch, can the extension of the head (or the separation of the chin from the breast) begin. If the distension of the perinæum begins too early, the head must pass the vulva with unfavorable diameters—namely, with the great oblique, or great or straight diagonal diameters. Such a passage easily causes laceration. Hence it is the task of the

physician to prevent a premature distension by the head. This he effects by placing two fingers between the labia, or in some cases between the pubic arch and occiput, so as to bring the head downward and outward, at the same time laying the other hand on the hinder part of the perinæum, upon which the face is lying, and pushes this upward. This manœuvre is to be executed during the pains, which will thus protrude the head forward in the requisite arc. A very simple means of expediting the birth of the head consists in compressing firmly the distended perinæum with the whole hand. This resembles the squeezing out of the kernel from a cherry. On the passage of the shoulders care must also be taken lest the two shoulders pass together.—*British and Foreign Medico-Chirurgical Review*, October, 1858.

3. Eclampsia at the Eighth Month; Recovery; Delivery of Two Children United by their Sides. By *Dr. Boursier*, of Creit. (*L'Union Médicale*, June, 1858.)—The case of eclampsia and double-birth of Dr. Boursier is especially interesting. A primipara, subject to hysterical attacks, was at the eighth month of gestation. A month ago she had complained of headache, for which she had been bled. Eight days before this she had been seized with considerable œdema of legs and hands. It was remarked also, that her eyes were very bright. At time of observation, eclampsia had come on; she had had five severe attacks, with coma. Largely bled, and delivery attempted. A foot was felt presenting; this was seized, and also a second; they were right and left; but after an hour and a half of extractive effort, the pelvis could not be brought down. Dr. Boursier now felt a soft body situated at the junction of the two legs. After further violent exertion, he brought the two thighs out of the vulva, and a portion of the soft, smooth, blackish mass he had before felt. He then perceived a third leg behind. An extensive adhesion between the two fœtuses was now found. The fourth leg was freed; the two trunks descended, as well as the black mass, the size of a hen's egg, which had been torn, and gave exit to some intestinal coils. During this the fits increased. The delivery was accomplished by passing a loop of a napkin over the chest of the most forward child. By dragging strongly on this backward, the head was delivered; and lastly, the second head was born. Several attacks of convulsions occurred afterwards; but she recovered favorably.

The anatomical relation of the Fœtuses.—Both boys, of middle size, well formed in all the non-adherent parts; they are slightly inclined toward each other. The adhesion is formed in the soft and bony parts of the abdomen, so as to constitute only one abdominal cavity. In the central part of the common belly the walls are formed by the expansion of the umbilical cord, which has the form of a funnel, whose upper part, containing the vessels, is fixed to the sternal union; below, this membrane is turned backward, and is inserted on the iliac crests. This funnel has the size of a hen's egg, and contains a large part of the intestinal organs. The cord is single, very large, and has only one vein. The chests are normal, and contain four lungs. The hearts are large, and placed forward on a level with the sternums. There are two stomachs, small, each containing a spoonful of yellowish mucosity. A spleen is attached to each. There are four kidneys and two bladders. The consequences of the fusion are two diaphragms united by their corresponding sides, preserving their points of attachment to the ribs. They possess a single liver, evidently composed by the union of two organs, for there are two gall-bladders. It is large, and occupies the central part of the umbilical pouch. The greatest anomaly consists in the atrophy of the intestine of the left child, which is reduced to the form of a cord (hollow.) The rectum, colons, cæcum, small intestine, are very distinct. This intestine has no communication with the stomach. The intestine of the right child would have acted for both. The left one would only have had the trouble of digestion.—*Ibid.*

MATERIA MEDICA AND THERAPEUTICS.

1. TARTAR EMETIC IN LARGE DOSES IN THE TREATMENT OF CHOREA. By *M. Gillette.*—In the session of March 6th, 1858, of the "Société Médicale d'Emulation," M. Gallard mentioned a thesis of M. Bonfils on the use of tartar emetic in large doses in the treatment of several cases of chorea. As the facts reported in the essay of M. Bonfils had been observed in the service of M. Gillette, the latter was requested to explain to the Society his mode of treatment. It is the following:—

For the first day he prescribes ten centigrammes of tartar emetic, which the patient takes from hour to hour. In the course of the day vomiting generally supervenes; if it becomes too frequent, the medicine is given less frequently, or is entirely suspended. On the second day he prescribes twenty-five centigrammes; this produces, perhaps, some vomiting still. On the third day, thirty centigrammes; this is generally *not* attended by vomiting or purging. After this period, three or four days rest. There is already an improvement, and a perceptible amelioration of the disease. In exceptional cases, the cure is obtained thus early. The patient is subjected to the same treatment for another period of three days, during which M. Gillette prescribes progressively, twenty-five, fifty, and seventy-five centigrammes of tartar emetic. This period is also followed by three or four days of repose, after which the dose of the medicine is pushed to thirty, sixty, and one hundred grains. The improvement is such, that no disorderly movements are any more perceived. The case may then be confirmed by ordinary means, particularly gymnastics and sulphur-baths; but this is a precaution dictated more by custom than by necessity.

Since the thesis of M. Bonfils, several new facts of cure have been observed. The use of tartar emetic in the treatment of chorea has afforded to M. Gillette actually thirty-seven cures and only one failure in thirty-eight patients submitted to his observation. The author's attention in the administration of the medicine is particularly directed toward establishing, as soon as possible, a tolerance of the remedy; perturbation of the system, by producing the violent physiological effects of the emetic, should be avoided. The chorea disappeared progressively, and the sooner, the more intense the affection had been.

M. Brienne de Boismont reports a case cured in five days by the method of M. Gillette.

There was nothing said of the local action of tartar emetic on the mucous membrane, and it is well known that the prolonged influence of the medicine has some inconveniences.—*Union Médicale,* June 12, 1858.

2. ON THE USE OF PROPYLAMIN IN RHEUMATISM. By *Dr. Amenarius.*—Propylamin, a peculiar volatile alkali, obtained from herring-pickle, cod-liver oil, ergot, human urine, etc. promises, according to the observations of Dr. Amenarius, to become a real specific in the different diseases which are of purely *rheumatic* origin; nay, in cases where the diagnosis is doubtful, the exhibition of propylamin, continued for a few days, will even afford a criterion of the true nature of the malady. The author used this remedy, with excellent results, in two hundred and thirty cases of acute and chronic rheumatism, which came under his observation within a period of three years, in the Kalinkin Hospital, in St. Petersburg, Russia, and treated a large number of patients outside the hospital with equal success. Most cases were: partial or general muscular rheumatism, rheumatic facial neuralgia, metastatic rheumatism of the pericardium, membranes of the brain, or pleura, hemiplegia and paraplegia of the lower extremities. In acute cases, pain and fever had often disappeared on the next day. Form and dose:—℞. Propylamin, gtt. xxiv in aq. distil. ℥vi, to which may be added Elæosacchar. Menth. pisst. ʒij; every two hours a tablespoonful. —*Med. Ztg.*, Russl. 6, 1858; and *Schmidt's Jahrbücher*, 7, 1858.

3. ON THE EXTERNAL USE OF HYDROCHLORIC ACID. By *Prof. V. Kletpinsky.* —In the course of some investigations made with reference to the physiology and pathology of the skin, Prof. Kletpinsky found that, among all the agents subjected to the test, none was as efficient in exciting the respiratory function of the skin, accelerating the capillary circulation, and influencing the action of the lymphatic and glandular system, as hydrochloric acid. Skin moistened with hydrochloric acid expired, under the same circumstances, twenty-seven to thirty per cent. more of carbonic acid, and, what is very remarkable, seven to twelve per cent. less of water, than an equal space of skin not subjected to the influence of the acid. This fact induced the author to apply the acid in a great number and variety of cases, in order to test its therapeutical efficacy. He obtained the following results:—

1. Hydrochloric acid restores and stimulates the circulation if periodically interrupted or stagnating; it thus cures frost-bite and chilblain, and is an efficient prophylactic against these complaints.

2. The acid diminishes the troublesome perspiration of the hands and feet, and cures it in some cases completely, if the application is continued long enough.

3. It is an efficient remedy in a great variety of cutaneous diseases, particularly in follicular acne; by rendering the metamorphosis of tissues more active, it destroys, if steadily used, many maculæ and exudative patches of the skin.

4. It does not injure the integrity of the epidermis, if properly applied, but diminishes its roughness and callosities; like a true cosmetic, it renders the skin pliable and soft, increasing at the same time its density, and making it, consequently, more resistant to obnoxious influences.

The hydrochloric acid, which must be free from admixture of iron or chlorine, is best applied in as concentrated a condition as can be borne, without its giving rise to burning; commonly, a more concentrated acid can soon be made use of, even if it was inapplicable at the beginning of the treatment. The skin is moistened with the acid, (which was used by the author in many cases even in its fuming state,) and is washed off after a quarter of a minute, at first with water and then with soap. It is easily understood, that the hands bear most easily the concentrated acid, the feet (especially the toes) less, the forehead the least; on all sensitive places of the skin the acid must be applied more diluted and for a shorter time. It is an excellent plan to mix the hydrochloric acid with glycerin, the therapeutical action of which on the skin is hardly enough appreciated, and which in this case renders a longer application of the acid, even to a sensitive skin, practicable.—*Oesterreichische Zeitschrift für praktische Heilkunde*, No. xii.

4. ERGOTIN IN PULMONARY TUBERCULOSIS.—*Dr. G. Ferrini* recommends ergotin as an efficient remedy in pulmonary tuberculosis, as it not only diminishes the cough, but also reduces the congestion of the lungs, and by thus checking the progress of the disease, acts not merely in a palliative, but in a truly curative manner. The author gives the remedy in doses of fifteen to twenty grains daily in mucilage, and aids the treatment by the use of counter-irritants, and depletion, if necessary. Dr. Ferrini supports his recommendation by a great number of cases, of which he communicates five more fully.—*Annali Univ.*, Agosto, Settembre, 1857.

5. ACETATE OF COPPER IN PRURITIS. By *Dr. G. V. Lafargue.*—The author communicates two cases of chronic hyperæsthesia of the skin, accompanied by violent itching, (no anatomical changes being perceptible,) in which he used a solution of ten centigrammes of neutral acetate of copper in twenty tablespoonfuls of water, (mornings and evenings, a tablespoonful—five milligrammes of the salt; later, twelve milligrammes.) After a few weeks a complete cure was obtained. Derangement of the digestive organs was not observed.—*Bull. de Thér.* liv., p. 168; 1858.

6. NITRATE OF SILVER IN THE TREATMENT OF OZÆNA.—*Dr. Gallizioli* recommends, in the *Raccoglitore Medico di Fano*, the use of nitrate of silver in the treatment of ozæna. The salt is either snuffed up, mixed with the powder of the iris florentina, or introduced into the nostrils in the form of ointment. In evidence of the usefulness of this method he reports several cases, of which we present only the following:—

A young girl was cured of ecthyma by the use of sulphur-baths and laxatives; she suffered, however, at the same time, from ozæna, which had distressed her and her family for eight years on account of its repulsive smell. Dr. Gallizioli ordered an ointment of 40 centigrammes argent. nitrat. to 30 grammes axung. porc.; pledgets of charpie were smeared with this and introduced deep into the nostrils. The application was renewed every day, and in sixteen days the patient was completely cured.

7. RESEARCHES ON THE THERAPEUTICAL ACTION OF THE PERCHLORIDE OF IRON IN THE TREATMENT OF ACUTE AND CHRONIC URETHRITIS. By *M. Barudel.*—It results from the researches of M. Barudel, that the perchloride of iron, besides

its hæmostatic properties, for which it is so often applied, possesses, on internal administration, a very manifest sedative action on the general circulation. In thirty patients subjected to this treatment the pulse fell in two or three days from seventy or eighty a minute to sixty and even fifty; this salt produces neither cramps, pinching, or twinging of the stomach, nor uneasiness in the cardiac region, colic, nor constipation. The chloride of iron has been administered by M. Barudel with remarkable results both in acute and chronic urethritis. In the acute form he orders an injection of 10 grammes of the iodide of lead in 100 grammes of water to be used three times daily, and administers at the same time the following potion :—

℞.—Distilled water, 60 grammes;
Perchloride of iron of 30°, 20 drops;
Simple syrup, 15 grammes.

To be taken every two hours. Continue this potion for ten days.

In the chronic form, the internal treatment is exactly the same; for the injection of the iodide of lead the following is substituted :—

℞.—Perchloride of iron of 30°, 25 drops;
Distilled water, 100 grammes.

Inject three times daily, taking care to keep the liquid for ten minutes in the urethra.

If the pain provoked by this injection is too severe and lasts too long, it should be followed by two or three injections of cold water, and a day of repose should be permitted to the patient. This treatment has never given rise to any accident. It produced generally a marked improvement in three days, and often a cure in five days. M. Barudel combines with it a tonic regimen and cooling drinks, such as milk and flaxseed tea with nitre.

These results, and the two observations chosen from a great number of others, with which M. Barudel concludes his article, should induce physicians to try the proposed treatment.—*Bulletin Général de Thérapeutique*, May 15, 1858.

Editors' Table.

Geological Affinities of Thermal Springs.—In a previous article on the subject, (July, 1858,) we alluded to the affinity of volcanic action to the thermalism of springs, and stated that the sublimates, or substances of volcanos when converted into a gaseous and fluid state, give us nearly all the ingredients of mineral and thermal springs. Beginning with the proposition advanced by Stefft, that, "generally mineral springs follow the course of mountains composed of igneous rocks," and the modification advanced by Bischoff, that "we shall find it impossible to avoid recognizing a relation between elevations of Plutonic masses, the upraising of Neptunian formations, and thermal springs," we come to the more positive and distinctly expressed belief of Keferstein and Van Hoff, that hot springs constantly accompany volcanic regions. Dr. Daubeny, in his treatise on Active and Extinct Volcanos, has placed this subject in a very clear point of view, and with an array of facts and well-conducted argument which can hardly fail to secure the opinion of the reader on his side.

Wide as is the geographical range of volcanos, that of thermal waters, as we shall soon see, is not less so. In the New, as in the Old World, they are found in close association, one with the other, and evince, in many instances, analogous modes of exhibition, and, as said above, almost identity of products. The eruptions of some volcanos, as those of Peru and Quito, are destructive, not by the lava, but by the water and enormous streams of mud thrown out from them. The water of one of the boiling mud cauldrons of Iceland, analyzed by Professor Bunsen, contained the same substances of which the lava from Mount Vesuvius was composed, with the exception of protoxide of iron in the latter, which was absent from the former.

Travelers who visit Iceland, when they see Hecla with its volcano, and the neighboring hot springs of the Geysers and Strokr throwing up lofty columns of water and steam, and when they hear subterranean noises like thunder, while the ground vibrates and trembles under their feet, as if it were about to open and engulf them in the abyss beneath, are forcibly impressed with the resemblances between volcanic and thermal phenomena. These are made the more striking by the explosive force and "the frightful violence" with which the water is ejected, and by the intermittent character of the eruption. Large stones thrown into the spring were projected to such a height that they could hardly be seen by the naked eye. Many were so perfectly vertical in their ascent that they fell back again into the pipe of the spring; and they seemed, in their subsequent projections, to answer the purpose of balls for this gigantic spring to play with.

The Hot Springs of Furnas, in the island of St. Michael, one of the Azores, exhibit many phenomena similar to those of Iceland, and, at the same time, their connection with volcanos.

The water in the larger spring, or Caldeira, boils with violence, and emits, at short intervals, loud explosions, which are succeeded by a distinct rise of the water in its containing basin. During this latter period a loud hissing noise is heard, with an escape of great quantities of sulphuretted hydrogen gas, steam, and sulphurous acid. All of these are volcanic products likewise. Silica, so predominant an ingredient in the hot springs of Iceland, is also found in those of St. Michael. Sulphur abounds near the springs. Contiguous to the principal hot spring, or Caldeira, there is a hill fifty feet in height, the side of which having fallen in, opens to view a deep cavern, frightful by its extent, its steam, and gaseous exhalations, and the tremendous noise issuing from it.

Similar associations between volcanic action and thermal springs are found on the slope of Vesuvius, and around the Bay of Naples, (the Phlogræan Fields,) in the region of Mount Etna, and among the volcanos of the New World. A still more striking example was furnished by the volcano of Jurillo, in Mexico, which was suddenly protruded from the great plain of Malpais to the height of 1600 feet, in a single night, in the year 1759. The space, now the site of a volcano, was occupied by fertile fields of sugar-cane and indigo, and watered by two streams, Cuitimba and San Pedro, which disappeared during the eruption; losing themselves below the eastern extremity of the plain, and reappearing as hot springs at its eastern limit. The appearance of the volcano of Jurillo was preceded, during two months, by earthquakes, accompanied by the issue of flames from the ground and the ejection of burning rocks to a prodigious height.

In further confirmation of the view now taken, we may state that the constituents of lava, pumice and other volcanic products, are often the same as those deposited by thermal springs; and that igneous rocks are decomposed and their chief constituents held in solution by these springs. As remarked by De la Beche, many thermal, and at the same time mineral springs, appear to be only the condensation of vapors and gases effected in portions of fissures from volcanic vents, after the temperature has become sufficiently lowered. Rocks formed by deposits from thermal springs have, as pointed out by Menge, many of the characters of basalt, porphyry, wacke, tufa, and obsidian—recognized volcanic products. To the same thermal origin, Jameson and others attribute precious opal, common opal, and jaspers of various descriptions.

To the emanations, in the form of vapors, and to mineral waters, Elie de Beaumont refers the origin of mineral veins, the various facts relating to which we are enabled, by this hypothesis, to comprehend, especially the development of those chemical affinities which have long been observed to influence the manner in which the metals are associated. Substances which are usually brought together have much in common between them; and they often exhibit quite analogous properties. Such are nickel and cobalt; iron and manganese; antimony and arsenic; silver and lead. With respect to the vapors and gaseous substances thus discharged from volcanos, and found in mineral waters, the writer just named has pointed out nineteen substances contained alike in them and in mineral veins, viz., *potassium, sodium, calcium, aluminum, manganese, iron, cobalt, lead, copper,* *hydrogen, silicon, carbon, borax, arsenic, nitrogen, selenium, sulphur, oxygen,* and *chlorine.* The substances found in mineral waters and veins, and not hitherto noticed in volcanic emanations, are, *lithium, borium, strontian, magnesium, phosphorus, iodine, bromine,* and *fluorine.*

As exhibiting both the origin of common and thermal springs and their chemical and geological relations, the paper by Bunsen, "On the Intimate Connection Existing Between the Pseudo-volcanic Phenomena of Iceland," in one of the Cavendish Society volumes, may be consulted with advantage. He tells us, that the active volcanos, "upheaval on fissures, intersect the whole island in a parallel system of longitudinal lines, whose northeastern extremity corresponds perfectly with the parallel expansion of the principal valleys and elevated ridges of the main system, and with the numerous volcanic fissures and dykes with which the country abounds, while the fumaroles and thermal systems appear to be likewise connected with the main direction." This last may be traced in lines passing transversely over mountains and valleys. "This circumstance, and the common occurrence of solfataras, suffiones, thermal springs and geysers, and, still more, the intimate connection existing between the phenomena of decomposition, to which they give rise, lead, even on a superficial observation, to the conclusion that all these phenomena are merely to be regarded as one and the same fundamental cause."

While the evidence is thus cumulative in favor of the intimate relations, as effects of a common cause, between volcanos and thermal springs, we cannot, on the other hand, overlook the decidedly adverse opinion of Humboldt, who asserts that hot springs burst out of the most diversified mineral strata. Among the hottest of all the perennial springs which have yet been observed, are those discovered by this celebrated traveler and savant, and which flow remote from all volcanos. He refers to the *Aguas Calientes de las Trincheras,* between Porto Cabello and New Valencia, and to the *Aguas de Cimangillas Guanaxuesta,* in Mexico. The first-mentioned spring issues from granite, and its temperature is 162° 5′ F.; the second from basalt, showed 173° 5′ F. But this broad assertion is not so much at variance with the view which we have presented to our readers, especially when we receive the amplification given to it by Daubeny, viz.: that hot springs, in a very large proportion, arise from rocks, which, in their general aspect and structure, attest the operation of volcanic forces at one time or another. Even if we should still admit that there is a large proportion of thermal springs which appear to be quite remote from volcanos, either active or extinct, we shall find, nevertheless, that great numbers of these springs rise in primitive mountain chains, which, although they may not present on their surface volcanic products, bear undoubted marks of igneous origin. The thermal waters of the Alps do not, writes Balkewell, rise in the upper strata, but spring out of the lower primary rocks. The range from the Simplon, through Savoy, to the confines of France, and even to Dauphiny, is in nearly the same direction. Earthquakes occur in the Upper Valais, where the temperature of the water is highest. The mountains in the above range are placed at or near to one common source of heat, to the agency of which they owe their original elevation. All along the southern declivity of the Alps, as pointed out by Daubeny, a continued chain of hot springs emerges from the line of junction of the primitive with the newer rocks, which can be traced from the foot of Mount St. Blanc and the Great St. Bernard to the volcanic products of the Euganean Hills, in which are found the thermal waters of St. Didier, Acqui, Pelegrino, Bormio, Masimo, Caldero, Abano, Balttaglia, and Monte Orlone.

Professor Forbes points out, as remarkable, the connection of the appearance of hot springs with granite in the region of the Pyrenees. Their abundance increases as we advance eastward in the range. At Ax, as we are told by the same writer, this most remarkable thermal site, reported to be the most prolific in Europe, confirms "the general principle, *that hot springs take their origin* at the boundary *of granite.*" Ax is situated on the River Ariége, several leagues above Ussac. We pass from limestone to slate, and from slate to granite, precisely at Ax. In this town alone, seventy or eighty hot springs take their origin; scarcely an opening in the ground can be dug to any depth without water making its appearance. The fountains in the market-place are supplied with it; manufactories are worked by it; even culinary operations are performed by it; and all this, continues Mr. Forbes, in addition to the supply of innumerable baths, with such varieties of the water as are most highly mineralized. The chief groups of springs are at the market-place, and of these the most remarkable is the *Source des Canons*, the water of which has a temperature of 168° F., and is nearly pure.

The springs of Thorez, in the Pyrenean group, are among the hottest in Europe, being from 166° to 171° 5′ F. Arago declared the spring at Chandes Aigues, in Auvergne, to be the hottest in Europe of those unconnected with recent volcanic action. He quotes it at 176° F., or 80° Cent. Among the springs of the Pyrenees those of Bagnères-de-Luchon issue from the granite within a few feet of each other, although, curiously enough, they differ in their temperature as well as in other respects.

Captain Newbold asserts that a majority of the springs of India, which can be strictly called thermal, occur on or near lines of great faults, occasioned by the upheaval of Plutonic rocks. A similar remark may be extended to the most celebrated of the hot springs of Asia Minor. So, likewise, in many of the European islands, the connection between volcanos and igneous upheavals on the one side, and thermal springs on the other, is of frequent occurrence. Examples of the contiguity of some springs to remarkable dislocations of strata are presented at Aix, and Carlsbad, and at Pfeffers, and other thermal springs in Switzerland, and at Clifton and Malvern in England,

Coincident with the preceding views are those entertained by Dr. Wm. B. Rogers, in a paper on "The Connection of Thermal Springs with Anticlinal Axes and Faults." Of *fifty-six* thermal springs, chiefly in the great limestone valley of Virginia, *forty-six* of this number are situated on or adjacent to anticlinal axes; *seven* on or near lines of faults and inversion; and *three*, the only group of this kind yet known in Virginia, close to the point of junction of the Apalachian with the Hypogene (primitive) rocks.

In conclusion, we shall point to the fact of the connection between earthquakes and thermal springs, which we have shown to exist between the latter and volcanos All these are referable to a common cause, great heat in the interior of the earth, and their differences are explicable by the greater or less facility of its passage to the surface. Thermal and mineral springs are abundant in countries of earthquakes, as well as of active volcanos. We might cite various instances of the effects of earthquakes on thermal springs, in sometimes stopping for a while their flow, sometimes rendering them turbid, and, again, changing their temperature.

On a future occasion we shall ask our readers to accompany us in our tour in quest of thermal springs. The search will be rich in its results.

"A HIT—A VERY PALPABLE HIT."—Our facetious contemporary, "*The Medical News*," apparently proof against the gloomy influences of the season, has perpetrated a good thing, which, although it is in part at our expense, we cannot refrain from repeating.

> "*Mrs. Partington.*—This discriminating lady, we are led to believe, has become a contributor to some of the medical journals; for we find in them several articles which strongly bear the impress of her peculiar and happy style of elucidating subjects.
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> "Thus—we notice in an editorial article in the *Medical Times and Gazette* for October 30th last, the following statement:—'Bibron is said to be an antidote for the poison of the rattlesnake. M. de Vesey has made experiments to test the correctness of Dr. Hammond's observations, and the results are quite confirmatory of them.'
>
> "A writer in a contemporary in this country seems to have been equally 'exercised' by Bibron's antidote. After giving correctly the formula for its preparation, he remarks: 'As no solvent is mentioned in this formula we are unable to attach any meaning to the dose of ten drops, or to tell its strength.'
>
> "The writer seems not to be aware that bromine is a *liquid*, and we therefore state the fact for his information."

The announcement, that a prescription which is directed to be given in drops is a liquid, must be thankfully received, if not for its novelty, at least for the good nature which prompted its utterance. But our jocose critic "seems not to be aware" that bromine, although a liquid, is a fit substance for a solvent, and that liquid though it be, it is seldom administered medicinally, unless it be in a state of solution. Turner, in speaking of the properties of bromine, says: "It is soluble in water, alcohol, and ether, the latter being the best *solvent*."* If our critic thinks that we have given too great a latitude to the meaning of solution, we would refer him to the chemical definition of the word, as found in Booth & Morfit's "Encyclopedia of Chemistry," which happens to be at our elbow. It reads thus: "The union of a solid, liquid or gas with a liquid in which it disappears or becomes liquid." In illustration, we are told in the same article, "that water dissolves a little ether, and ether a little water," which, if the restricted view of our critic, as to the behavior of a liquid, were sound, ought to be called a very unnatural intimacy and attempt at union between these two liquids, and as such would no doubt cause poor Mrs. Partington to be not a little exercised on the occasion, and to exclaim—"Why should a liquid allow itself to be liquidated, or a liquor-dealer allow himself to be changed into a man in liquor?"

We have said that bromine is seldom administered medicinally, unless it be in a state of solution. In Bell's "Practical Dictionary of Materia Medica," a work to which our "writer," who is so paternally advised by our contemporary, might be supposed to refer, we are told—"An aqueous solution, composed of one part, by weight, of bromine, and forty parts of water, may be prescribed in *doses of five or seven drops*, properly diluted, and flavored with syrup." Very nearly the same language is used in the still more authoritative work of Drs. Wood and Bache, the "Dispensatory of the United States"—"The form in which bromine is employed is aqueous solution," of the same strength as that just described, and in a dose of six drops, several times a day.

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* The italics are ours.

With a knowledge of the fact, that bromine is an active irritant poison, one drop of which on the beak of a bird has caused instant death, and that one drop in half an ounce of water produced a sense of heat in the mouth, œsophagus, and stomach, and subsequent colic, our "writer," after repeating the formula for "Bibron's antidote," might very naturally pause and bethink himself of the necessity of a solvent for ten drops of bromine, which was nothing weakened certainly by the addition of iodide of potassium and corrosive sublimate. This dose of ten drops is about sixty-five times the strength of the average dose of six drops of the watery solution just noticed; and hence to reduce the strength of the ten drops to that of the one prescribed in the two works quoted from, would require that the former should find a solvent of more than six drachms and a half of water. The formula entire for "Bibron's antidote" would require to be dissolved in more than a pint and a half of water, to reduce it to the same standard. This *solution* would then be fitted for ordinary extemporaneous prescription in drops, the acrimony of which will be covered by dilution in some mild or agreeable vehicle, syrup, wine, etc. But while we offer good and sufficient reasons for the language held by our "writer," we do not for a moment question the accuracy of these gentlemen, who gave the bromine in such large doses. We would, however, caution our medical brethren against beginning with such doses in cases in which the system is not powerfully impressed by some toxical agent, such as that described by the gentlemen who used Bibron's antidote.

RETENTION OF AN ENORMOUS QUANTITY OF URINE.—We have received from Dr. E. B. P. Kelly, one of the resident-physicians in Blockley Almshouse, the following notes, interesting on account of their showing the great extent to which the urinary bladder can be dilated:—

"A. H., aged forty, born in Ireland, was admitted into the hospital on the 25th of June, 1858, laboring under a severe form of tertiary syphilis, which had made fearful ravages on the bones of the skull and on the inferior extremities. He had also several organic strictures of the urethra, the result of repeated attacks of gonorrhœa, one, which was very firm and resisting, being situated near the extremity of the organ, another, of less extent and more dilatable, at the triangular ligament, and, a third, between those two points, which was easily overcome. The patient succeeded in concealing his true condition until 11 P.M. of the same date, when he was suddenly taken ill and became very much alarmed. I was sent for, and upon my arrival found him in great agony, with hurried breathing, quick fluttering pulse, and anxious countenance. The state of the patient led me, at once, to inquire into the condition of the urinary bladder, and, to my utter astonishment, he informed me that he had not passed water for five days and a half. An examination of the abdomen, which was greatly distended, the bladder having risen two inches above the umbilicus, confirmed, in great measure, the statements of the patient.

"I found it impossible to introduce a silver catheter, on account of the resistance of the strictures, and ordered a warm bath and some relaxing medicine, after which I succeeded by gentle and persistent efforts in introducing a small bougie. Allowing this to remain for a few minutes, I used a second and then a third instrument of larger size, when the catheter passed with considerable facility, and was followed by the escape of the enormous quantity of one hundred and thirty-two ounces of urine.

"The patient ultimately recovered under the use of the iodide of potassium and bichloride of mercury, conjoined with tonics and a good diet."

A New Preparation of Cimicifuga Racemosa.—Dr. John G. Kœhler, of Schuylkill Haven, Pa., has sent us the following communication in regard to this remedy:—

"During the month of July, 1858, I had occasion to use black snakeroot in several cases of chorea; but not finding the desired success with the tincture or decoction, it occurred to me that a more certain preparation could be made. I determined to employ dilute acetic acid and alcohol, and after various experiments as regards strengh, I finally adopted the following formula:—

℞.—Rad. cimicifugæ, ℥v;
Acidi acetici dil. ℥j;
Spts. vini rectif, ℥viij;
Aquæ, ℥xi.

"Digest fourteen days and filter. Dose, ʒj to ʒij.

"After due trial I found this combination to answer better than any other form, and the neighboring physicians, to whom I gave the formula, express themselves as highly pleased with the acetated tincture of cimicifuga. It has been successfully employed in nervous affections, and as an alterative in various forms of rheumatism and uterine affections."

Blockley Hospital. — Notwithstanding the exertions of one of the former chief-resident physicians in this institution, and the numerous outcries of the press of the city, we are happy to say, that through the energy of Dr. Oliver, one of the Board of Guardians, clinical instruction has again been resumed, and facilities, unsurpassed by any hospital in this country, have been opened to students. The consulting corps appointed by the Board consists of the following gentlemen:—

Physicians.—Drs. Jos. Carson, J. B. Biddle, J. Aitken Meigs, J. Da Costa.

Surgeons.—Drs. J. Neill, D. H. Agnew, W. L. Halsey, R. J. Levis.

Obstetricians.—Drs. R. A. F. Penrose and E. McClellan.

Clinical lectures are delivered every Wednesday and Saturday, by Drs. Agnew and Biddle.

Criminal Abortion.—We would call the attention of the profession to the queries appended to Dr. Storer's article on this subject in the present number of this Journal, and solicit their co-operation with the author in the furtherance of his inquiries.

Quackery in Paris.—There is now at Paris a negro who carries everything before him as a quack doctor.

He is a fine man of his race, covered with trinkets and diamonds, displaying great wealth in house, carriages, etc., and obtains the most fabulous fees from the easily-gulled Parisians. Among his various feats, *L'Union Médicale* relates the following:—He was sent for the other day into a very rich family, where a lady had for years suffered from very obstinate recurrences of fibrous tumors about various parts of the body. The best surgeons of Paris had failed in arresting the disease, and recourse was naturally had to wild systems of medicine; all these, however, including homœopathy, were powerless. Magnetism, necromancy, etc., had their turn, but nothing succeeded. At last, the negro's turn came. When he had cursorily examined the patient, he exclaimed, "This lady is curable, and I shall get her well in fourteen days." "Well, then," said the husband, "undertake the case at once." "My fee is £800; £240 is to be paid at once, and £40 on every other visit." Much demur was made to such a demand; but as the quack threatened to go away and leave the lady to her fate, he was allowed to pocket the £240, and has begun the treatment. The result is not known, but may easily be guessed at.—*The Lancet*, Oct. 2d, 1858.

Since the appearance of the above in the London *Lancet*, we learn that the impostor, after a short triumph, has disappeared from Paris, leaving many victims to mourn his loss.

M. FALCONY'S POWDER FOR PRESERVING DEAD BODIES.—The result of a very successful trial of M. Falcony's mode of preserving dead bodies was seen at the Grosvenor-place School on Tuesday. A body was brought to the school on the 24th of September in a state of decomposition so advanced as to be quite unfit for dissection. It was covered with M. Falcony's powder, and left in an open coffin until Tuesday last, when it was inspected in the presence of a number of scientific and literary men. There had not been the least offensive odor in the room in which the coffin was kept, and the body on Tuesday was quite free from odor. The powder used contains a large proportion of dried sulphate of zinc; this is mixed with common sawdust of white pine before covering the body. The rationale of the process is easily understood. The sawdust keeps the oxygen of the atmosphere from access to the body, and the emanations from the body are oxydized in the sawdust by the atmospheric oxygen. Hence there is no escape of the fetid gases. Then internal decomposition is prevented by the sulphate of zinc absorbing the water of the body, deliquescing, and recrystallizing as hydrate —probably with seven equivalents of water of crystallization. Whether this explanation be correct or not, there can be no doubt whatever that the process is a cheap, safe, and effectual one, perfectly fulfilling its intended object; and we feel sure that the adoption of such a process with all our dead, would tend to protect the living from cadaveric poisoning of the air we breathe and the water we drink.—*Med. Times and Gazette*, Oct. 23d, 1858.

TREATMENT OF THE APPARENTLY DROWNED.—The following instructions for the resuscitation of the apparently drowned have been extensively circulated by the National Lifeboat Institution throughout the kingdom and our colonies. They contain the latest discoveries on this important subject, the institution having taken great pains to obtain the opinion of the medical profession generally both at home and on the continent on the comparative merits of this and the antiquated plan hitherto adopted in this country. Of the 300 medical men, some of them representing medical bodies, who gave the society their opinion on the subject, 254 were entirely in favor of the new method, 10 were on the side of the old plan, and 36 were undecided. It should be stated that the leading principles of the instructions are those of the eminent physiologist, the late Dr. Marshall Hall:—"1. Treat the patient instantly on the spot, in the open air, exposing the face and chest to the breeze, (except in severe weather.) 2. To clear the throat, place the patient gently, face downward, with one wrist under the forehead, in which position all fluids will escape by the mouth, and the tongue itself will fall forward, leaving the entrance into the windpipe free. Assist this operation by wiping and cleansing the mouth. If there be breathing—wait and watch; if there be no breathing, or if it fail, then—to excite respiration—3. Turn the patient well and instantly on the side; and 4. Excite the nostrils with snuff, hartshorn, volatile salts, or the throat with a feather, etc., and dash cold water on the face, previously rubbed warm. If there be no success, lose not a moment, but instantly, to imitate respiration—5. Replace the patient on the face, raising and supporting the chest well on a folded coat or other article of dress. 6. Turn the body very gently on the side and a little beyond, and then briskly on the face, alternately; repeating these measures deliberately, efficiently, and perseveringly about fifteen times in the minute, or every four seconds, occasionally varying the side. (By placing the patient on the chest it is compressed by the weight of the body, and expiration takes place; when turned on the side this pressure is removed, and inspiration occurs.) 7. On each occasion that the body is replaced on the face make uniform but efficient pressure with brisk movement, on the back between and below the shoulder-blades or bones on each side, removing the pressure immediately before turning the body on the side. (The first measure increases the expiration, the second commences inspiration.) The result is respiration or natural breathing; and, if not too late, life. 8. After respiration has been restored, promote the warmth of the body by the application of hot flannels, bottles, or bladders of hot water, heated bricks, etc., to the pit of the stomach, the armpits, between the thighs, and to the soles of the feet. To induce circulation and warmth—9. During the whole time do not cease to rub the limbs upward, with firm grasping pressure and with energy, using handkerchiefs, flannels, etc. (By this measure the blood is propelled along the veins toward the heart.) 10. Let the limbs be thus warmed and dried, and then clothed, the by-standers supplying the requisite garments.

"Cautions.—1. Send quickly for medical assistance and for dry clothing. 2. Avoid all rough usage and turning the body on the back. 3. Under no circumstances hold up the body by the feet; 4. Nor roll the body on casks; 5. Nor rub the body with salt or spirits; 6. Nor inject tobacco smoke or infusion of tobacco. 7. Avoid the continuous warm bath. 8. Be particularly careful to prevent persons crowding around the body.

"General Observations.—On the restoration to life a teaspoonful of warm water should be given, and then, if the power of swallowing has returned, small quantities of wine, or brandy and water warm, or coffee. The patient should be kept in bed, and a disposition to sleep encouraged. The treatment recommended should be persevered in for a considerable time, as it is an erroneous opinion that persons are irrecoverable because life does not soon make its appearance, cases having been successfully treated after persevering several hours."—*London Times.*

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An Experimental Inquiry into the Functions of the Supra-renal Capsules, and their Supposed Connection with Bronzed Skin. By George Harley, M.D., F.R.S., (*British and Foreign Medico-Chir. Review.* January and April, 1858.)

The Sunburnt Appearance of the Skin as an Early Diagnostic Symptom of Supra-renal Capsule Disease. By Isaac E. Taylor, M.D., Physician to the Bellevue Hospital, New York. With Colored Illustrations. (Reprinted from the *New York Journal of Medicine,*) pp. 21. New York, 1856.

It is not quite four years since Dr. Addison, the eminent senior physician to Guy's Hospital, startled the whole medical world by announcing, on evidence of which he was the first to see the bearing, the important fact that morbid changes in the hitherto-thought functionless capsulæ renales, were attended by disease of an exhausting and generally fatal nature, one of the most characteristic symptoms of which is a peculiar brown, or a bronzed skin. The other leading symptoms, as described by its discoverer, "are anæmia, general languor and debility, remarkable feebleness of the heart's action, and irritability of the stomach." The hesitation and doubt, if not incredulity, with which Dr. Addison's views were received in different quarters need not excite surprise. This state of mind was very natural, when we look at it in connection with the almost universal disbelief in the supra-renal capsules exercising any function whatever in the adult state, or, indeed, in any period of extra-uterine life. Whatever offices they might be conjectured to perform were, it was admitted by common consent, associated with fœtal existence. Not that a shade of doubt could be supposed to hang over the statements made by Dr. Addison, both as regards the disease and the *post-mortem* lesions which he describes. The dissent was to the extent of viewing as cause and effect, or as necessarily connected, the two series of phenomena; those in the living and those in the dead body, in these circumstances. It might have been asked, whether the fatal result was not due to lesions and degenerations in other organs, or in the blood itself? Fortunately this state of suspense was designed to be of short duration—and to Dr. Addison must be awarded the twofold merit: first, of recognizing and describing a new disease in connection with textural changes in an organ previously neglected, and deemed to be of no note; and, secondly, of putting forth his work, to use his own modest language in his preface, "as a first and feeble step toward an inquiry into the functions and influence of these organs, suggested by pathology."

The appeal thus made met with a ready response from one whose rising fame and already large contributions to physiological science are known in both hemispheres. Doctor E. Brown-Séquard, to whom we now refer, had his attention drawn to the subject soon after the issue of Dr. Addison's work, and he lost no time in instituting a series of experiments, with a view of ascertaining the functions of the supra-renal capsules. In availing ourselves of the researches of Dr. Brown-Séquard, as they are described in the journals designated at the head of this paper, and of those of Dr. Harley, we shall waive the chronological order in which the different topics connected with the whole subject have come up in the way of discovery and discussion, and shall begin with a succinct account of what is now known of the physiology of the supra-renal capsules, and then turn to account the pathological discovery of Dr. Addison, and the confirmatory observations of Mr. Hutchinson. By adopting this plan we hope to be able to exhibit a connected view of the probable relation of these bodies to the rest of the organism, and thus supply a want, which, we will venture to say, is felt by a large body of the profession.

In a paper in his *Journal of Physiology,* Dr. Brown-Séquard adverts to a remarkable fact published by him in 1857. It is, that a section of the lateral half of the spinal marrow at the dorsal and lumbar regions, in a Guinea-pig, was followed, at first, by congestion, and, after many months, by hypertrophy of the two supra-renal capsules. This singular connection between the spinal marrow and these small organs is the more worthy of notice when it shall be shown, as Dr. Brown-Séquard proposes to do in another memoir, that in some cases of fracture of the spine a noticeable congestion of the supra-renal capsules must be ranked among the circumstances by which death is hastened. In his first investigations, made expressly on the subject, a notice of which is contained in the *Comptes Rendus* of the session of the Academy of Sciences, in 1856, he declared that in all the animals from which he had removed the supra-renal capsules, or even one of them, death had rapidly supervened. The author also announced the fact that death occurred too soon after the ablation of the capsules to allow of our believing that it was due exclusively to a lesion of the kidneys, the liver, or the great sympathetic nerve. He remarked that the blood of the animals thus deprived of their supra-renal capsules, seemed to be charged with a toxical element. At least it was found that if the blood of rabbits, taken at the moment of their death, following ablation of these bodies, was injected into the veins of other rabbits, which had lost one of their capsules a few hours previously, it gave rise to the speedy death of these latter; whereas, on the other hand, the blood of a rabbit in good health, injected into the veins of a rabbit in its dying agony, caused its resuscitation for a period of some hours' duration. He added, moreover, that ablation of the kidneys does not destroy life so soon as that of the supra-renal capsules. M. Gratiolet, it may as well be mentioned at this time, wrote to the Academy, telling of his having made some experiments on Guinea-pigs, from which it appeared that excision of the left supra-renal capsule was not always followed by death, while that of the right capsule was constantly fatal, in consequence of inflammation of the liver and peritoneum. At the next meeting of the Academy, Dr. Brown-Séquard repeated his conviction, that death in these cases was not owing to accidental inflammation, which, from its being slowly developed, could not attain a sufficient degree of intensity to cause death at the time when this event took place.

Not long after this, Dr. Brown-Séquard wrote an extended memoir,* which appeared in two successive numbers (October and November, 1856,) of the *Archives Générales.* He begins by referring to some publications of great merit which appeared before the noted work of Dr. Addison, but which were confined almost entirely to the anatomy and pathology of the supra-renal capsules. Among these he designates M. Rayer's summary account in 1837, and a valuable production by Alexander Ecker in 1846, containing excellent views on the microscopic anatomy of these organs. In the memoir which we now propose to analyze its author announces his intention of exhibiting a series of facts bearing on the physiological and pathological history of the supra-renal capsules, and to compare the phenomena observed in man with those which he witnessed in animals.

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* Experimental Researches, etc., on the Physiology and Pathology of the Supra-renal Capsules.

The long and almost universally accredited opinion, that the supra-renal capsules were organs exclusively, or chiefly, belonging to fœtal life, is subjected to the test of experiment by Dr. Brown-Séquard, and shown to be unfounded. Stress was laid on the earlier and proportionately more rapid growth of these glands than of the kidneys in the embryo. It is only at the tenth or the twelfth week of intra-uterine existence that the kidneys have acquired the size of the capsules. By the sixth month the kidneys are twice the size of the capsules, and their weight is to that of the latter as five to two. In the new-born infant the proportions of the two in weight are as three to one; and in the adults the capsules are only one-half of the weight of the kidneys. Even if we admit these facts, what, asks the author of the memoir, do they prove? Nothing more than that the functions of the supra-renal capsules begin sooner than those of the kidneys. But this inference only applies to the human subject, for in the other mammiferæ they are always, from the earlier period of embryonic life to adult age, smaller than the kidneys. If the supra-renal capsules were exclusively related to embryonic life they would disappear or become atrophied after birth; but this is so far from being the case that they acquire an increased weight and three times the volume in adult life beyond what they had at birth. At the latter date the capsules vary in weight from 32 to 64 grains; and in the former or adult period, from 105 grains to rather more than 3 drachms. Taking the kidneys as organs for comparison, Dr. Brown-Séquard found that in dogs, cats, and Guinea-pigs, these organs in females weighed seven to ten times more than those of their freshly born progeny, while the capsules of the former were to those of the latter, in weight, as eight to eleven. It is obvious then from these data, that organs which grow in so noticeable a manner, from birth to adult age, must be endowed with function; and that it is an error to speak of them as belonging exclusively to fœtal existence.

We learn from the experiments of Dr. Brown-Séquard, that the supra-renal capsules are endowed with a high degree of sensibility. This might have been expected from their abundant supply of nerves; to such a degree indeed that some authors have regarded them as a kind of nervous ganglions. The presence of nerve-cells in the interior of these organs would seem to favor this belief, were it not ascertained by Nugel, Bardeleben, Ecker, and Frey, that they are glands. It is, nevertheless, certain, that they are more largely supplied with nerves than any other organ in the mammiferous animals; although this is not the case in the other vertebrate classes. The discovery of glandular vesicles in the supra-renal capsules of the four classes of the vertebratæ, has caused these organs to be definitively ranked among the ones which are now called sanguineous or vascular glands. The author is able to affirm, in relation to their nervous endowment, that the supra-renal capsules in the dog, cat, rabbit, and Guinea-pig, contain some fibres of Remak, and very seldom fibres of double circuit; but, on the other hand, very fine nervous filaments (the sympathetic fibres of Bidda and Volkmann) abound in them. The sensibility of the organs in question is incontestably greater than that of the other abdominal viscera in these animals. It is very acute in the rabbit, and nearly as great in the cat, but less in the dog and Guinea-pig.

Dr. Brown-Séquard ascertained by experiments that the mean period of survival, after the simultaneous ablation of the two supra-renal capsules, was nine hours and some minutes for rabbits, fourteen hours for adult cats and dogs, eight hours for two mice, thirteen hours for eleven adult Guinea-pigs, twenty-three and a half hours for four young Guinea-pigs, and thirty-seven hours for very young dogs and cats—which would give a total mean of seventeen and a half hours. A repetition of these experiments, as described in his last memoir, *New Researches*, etc., gave nearly identical results. He witnessed the survival of dogs and Guinea-pigs, after the ablation of the right supra-renal capsule, that which, according to M. Gratiolet, could not be done without the supervention of a fatal hepatitis and peritonitis. Dr. Brown-Séquard had seen death take place with a frequency and a rapidity, after the ablation of a single capsule, (the right or the left one,) especially in rabbits, to convince him that, even in this case, death was owing to the absence of the excised organ.

Among the very interesting symptoms which were observed after the ablation of the two capsules, the author designates, in a more particular manner, weakness and invariable disorder of the respiration and the circulation. The force of the heart's movements is always diminished, as is also, at first, the frequency of its contractions; but, after awhile, when the breathing, from being at first more active, becomes disturbed and slow, the heart beats quicker. It may be added, that during all this time there is no *fever*. With two exceptions, the animals which had lost their supra-renal capsules refused to take food. In the last period of life there is usually delirium, and very often convulsions occur, which resemble those caused by strychnia. Sometimes the convulsions are epileptiform, with a tendency to roll over on the left side, if the right supra-renal capsule have been removed, and *e contrario* as relates to the other. In rabbits there was often noticed a turning round.

The experimenter found in the blood of the animals, which had been deprived of their capsules more pigment than is commonly met with, and often this pigment was in laminæ, much larger than the diameter of the capillaries of the encephalon. He ascertained that the formation of the blood crystals, differing in some particulars from those which are found in the normal blood, takes place, often spontaneously, and with rapidity, and in great abundance, in the blood extracted from the vessels of animals deprived of their supra-renal capsules.

Dr. Brown-Séquard has observed a disease very prevalent among rabbits in Paris, which would seem to be always fatal, and in a very brief period too. He endeavors to show that this disease is connected with a redundant production of pigment and a consecutive inflammation of the supra-renal capsules,—and that its symptoms are analogous to those caused by ablation of the capsules, as both are to those of the disease described by Addison. On comparing the phenomena which the author noticed in animals, with those observed by Dr. Addison and others, in the human subject, it appears that the cessation of the functions of the supra-renal capsules is followed by an accumulation of pigment in the blood of the former, and the skin of the latter. Hence there is reason to suppose that one of the functions of the supra-renal capsules consists in modifying a substance endowed with the property of being transformed into pigment.

The author, in his *New Researches*, etc., published in his own journal, replies to M. Philipeaux's and Dr. Harley's inferences from experiments made by them, and which to some extent militate against the views which he had advanced, and of which we have just given a synopsis. M. Philipeaux had at first announced, in a memoir addressed to the Academy of Sciences, that he had seen four albino rats survive the ablation of the supra-renal capsules. In a subsequent communication, however, he reports the death of three of those animals, at periods of, respectively, nine, twenty-three, and thirty-four days, after the excision of the left supra-renal capsule; the right having been removed some weeks previously. He attributes these deaths, but without good cause, to cold. When death does occur after the operation, M. Philipeaux thinks it is owing to peritonitis, hepatitis, or to intestinal hernia. To this, Dr. Brown-Séquard replies, by showing that whereas lesions of the peritoneum, liver, renal veins, and vena cava do not destroy life, in many instances under twenty hours, and sometimes three weeks, a removal of the supra-renal capsules, accompanied by much less local irritation, is followed by death in seven to fourteen hours. He added that, very probably, other glands, such as the thyroid and the thymus, might supply the functional rôle of the capsules, when these are wanting. He concedes, at the same time, that animals may survive, as shown by the experiments of MM. Philipeaux, Martin Magron, and Dr. Harley, the ablation of their supra-renal capsules.

The whole question, as far as relates to the deductions drawn from experiments, is exhibited by Dr. Brown-Séquard under the following aspects. In the first place, all the physiologists who have repeated his experiments have noticed, as he had, that death invariably takes place, whatever may be the animal, after the *simultaneous* ablation of the two supra-renal capsules. It appears that even albino rats, under these circumstances, die, as well as rabbits, cats, dogs, Guinea-pigs, mice, rats which are not albinos, pigeons, etc. In the second place, even when the ablation of a single capsule is practiced, a certain number of days after the other had been removed, there is no instance hitherto observed of definitive survival except in albino animals; that is to say, animals without pigment. Now the author has pointed out, as one of the causes of death after the ablation of the supra-renal capsules of animals which are not albinos, the presence in the blood of plates of pigment too large to allow of their passage through the small capillaries of the encephalon, and which give rise to hemorrhage or defective circulation in this organ. Even if he is mistaken in supposing this to be a cause of death after the removal of the capsules, it is nevertheless certain that these little organs bear some relation to the production of a dark pigment; for, in more than sixty-five cases collected within the last few years, there has been noticed in the human subject the coexistence of a deposit of pigment in the skin, and a great change in the structure of the supra-renal capsules. There is, then, a casuality relation between the two facts: absence of the functions of these capsules, and increase of the dark pigment. If albino rats do not die after the ablation of the two supra-renal capsules, it would seem to be an important proof, in addition to those furnished by Dr. Brown-Séquard, that it is in part owing to an accumulation of dark pigment that death takes place in animals which are not albinos, when they are deprived of their glands.

Our attention is directed to a fact of some interest in the present inquiry by Dr. Brown-Séquard. It is the suddenness of the death of animals which seemed to have survived all the consequences of the ablation of the supra-renal capsules, and were in good health. Cases of this nature occurred in the experience of MM. Philipeaux, Martin

Magron, Dr. Harley, and the author himself. There are marked differences in the toleration, it might be called, of the removal of the capsules, or in the periods of the survival after the operation, depending on the age and species of the animal. Cats survive longer than dogs, rabbits, or Guinea-pigs; and the very young survive for a decidedly longer period than adults. A repetition of former experiments authorizes their author to repeat in this memoir what he had advanced on a former occasion, viz., that animals live much longer after an ablation of their kidneys than of their supra-renal capsules.

Dr. Brown-Séquard draws, as well from his own experiments as from those of physiologists who have disputed his views, the following conclusions:—

1. The functions of the supra-renal capsules seem to be essential to the life of animals which are not albinos.

2. The *immediate* and *complete* suppression of these functions gives rise to speedy death.

3. The *gradual* suppression of these functions is followed by death, at the very latest, after a few months, and in certain species of animals after a few days.

4. The simultaneous ablation of the two supra-renal capsules brings with it, in general, death sooner than the removal of the two kidneys.

5. If certain albino animals seem to be capable of surviving definitively the ablation of the supra-renal capsules, this fact corroborates the opinion which he had previously announced, that one of the chief causes of death in animals not albinos, after the loss of these small glands, consists in the accumulation of pigment.

Doctor Harley, in his *Experimental Inquiry*, treats of—1. The histology of the supra-renal capsules; 2. Their chemical composition; 3. The effects of their removal from healthy animals; and 4. Their pathology. We cannot, for want of space, follow the author in his morphological description, and extracts would fail to convey the requisite knowledge on this point. Doctor Harley agrees with Doctor Brown-Séquard in believing that the supra-renal capsules ought not be regarded as fœtal organs, since they continue to increase in size, in a certain ratio, after birth. We pass on to a brief notice of the chemical division of the subject, respecting which our information is still meagre. The discovery, by M. Vulpian, of a beautiful rose-color produced in the medullary substance of the capsules has not led to any conclusion respecting its import. Nor has the detection, by MM. Vulpian and Cabrez, of hippuric and taurocholic acids in the supra-renal capsules of herbivorous animals been productive of more fruitful results, as these substances have been found abundantly in different parts of the animal body.

Doctor Harley's investigations into the physiology of the supra-renal capsules have led him to opposite conclusions to those reached by Doctor Brown-Séquard. Doctor Harley rendered the animals insensible either by the smoke of the common puff-ball, or by ether. He operated on an adult cat, by removing, without hemorrhage, the right supra-renal capsule. The animal lived nine days after the operation, and was apparently in good health up to the eighth day. It was then noticed that she had lost flesh. The only morbid appearance, on examination, was inflammation with slight opacity of the peritoneum on the operated side. As one of the objects of Doctor Harley's extirpating the capsules was to ascertain if their removal would be attended by any change of color in the skin or its appendages, he took for his experiment a nearly white cat, both the supra-renal capsules of which were extracted at one time. Twenty-four hours after the operation the animal was found dead. "On *post-mortem* examination, some lymph was found effused upon one of the kidneys. There was no pus, but all the other signs of peritonitis." Dr. Harley usually deemed it necessary when operating upon animals, like the cat and dog, to ligate a vein of considerable size, which crosses directly over the middle of the capsule. Thinking that the injury done to this vessel might have caused phlebitis, he put a ligature round half of the left supra-renal capsule of a small white coach-dog, avoiding the vein altogether, and cut away the other half of the organ. Contrary to what might have been expected from Dr. Brown-Séquard's assertion, as the result of his experiments, that mere puncture of the organ is rapidly fatal, this dog, the next morning, came running to the door of the room in which he was confined, frisked about, and was hungry for his food. Six days afterwards, however, he was much less lively: on the ninth day he refused to eat, and on the twelfth day he died. A *post-mortem* examination revealed extensive and intense signs of peritonitis. "The intestines were glued together, and flakes of lymph abounded all over the abdominal walls. A large abscess, surrounded by an adventitious membrane, two lines in thickness, occupied the left hypochondriac region. It involved the lower half of the spleen, and rested upon the kidney. It does not, however, include this latter organ." The proximate cause of death was clear in this case, whatever opinions may be entertained as to its being consecutive on injury done to the supra-renal capsule, owing to the presence of the ligature, or to damage done to neighboring parts after the operation. Experiments showed that death will follow from another cause of injury in adjoining parts besides mere removal of the capsule. Dr. Harley next applied himself to the removal of the organ without mutilation of neighboring parts; and he performed the operation on a large tom-cat, by enucleating both the capsules at the same time. In this case he was astonished to find that the capsules were hard as a stone, and on making a section of them, a considerable portion of the medullary, as well as of the cortical substance, was replaced by a calcareous deposit, which consisted chiefly of carbonate of lime. The remaining portions of the gland contained so much fibrous tissue that the normal structure might be said to have entirely disappeared. Much to his surprise, Dr. Harley found the cat dead on the next morning after the operation, notwithstanding that this had been performed with the utmost facility, and there had been no hemorrhage or any apparent injury done to the surrounding parts, except the tearing through of the vessels and nerves. *Post-mortem* examination failed to reveal the mystery. "Nothing, absolutely nothing, was to be seen but a very trifling attempt at peritonitis." The author was very naturally indisposed to believe that the death could be owing to a removal of the supra-renal capsules, as the calcareous degeneration to which they had been subjected must, for a length of time previously, have destroyed their function, whatever it may be.

Dismissing, as unworthy of attention, the effects of tearing the blood-vessels and lymphatics, Dr. Harley takes up the question of the consequences of tearing across the nerves going to the supra-renal capsules. These, though small, are, as described in Quain's Anatomy, which he quotes, "exceedingly numerous. They are derived from the solar plexus of the sympathetic, and from the renal plexus. According to Bergmann, some filaments come from the phrenic and pneumogastric nerves. They are made up mainly of dark-colored white fibres, of different sizes, and they have many small ganglia upon them." The reader will remember the very abundant nervous supply to these bodies, described by Dr. Brown-Séquard in a preceding page. Dr. Harley asks, "what would be the result of mutilating the above-named nerves, independent of the removal of the supra-renal capsules? It is an established fact that instant death frequently follows upon sudden injury to the solar plexus. A blow on the epigastrium is often sufficient to prove rapidly fatal to life." Dr. Brown-Séquard has shown that mere pricking or cutting of the semilunar ganglion proves fatal to rabbits in the course of thirty hours, while division of the sympathetic, in the neighborhood of the kidney, causes death within twenty-three hours after the operation. Ludwig and Hoffer found that a section of the great splanchnic killed animals in the space of one or two days. "Such being the case, need we hesitate," argues Dr. Harley, "in the absence of all other proof, as to the cause of death in the above-mentioned experiments, to regard it as probable that the animal died from the injury done, in tearing out the capsules, to the ganglionic system of nerves?"

Dr. Harley regards the extirpation of the right capsule as more dangerous than that of the left, owing to the former being much more intimately connected with the surrounding parts, and especially to its lying closer to the semilunar ganglion than the latter; and hence greater injury is likely to be done to the sympathetic system of nerves in the extirpation of the right than of the left supra-renal capsule. Dr. Harley performed the operation of removing at first, the right, and nine days afterwards, the left supra-renal capsule, of an albino rat. The animal died twenty-five days after the extirpation of the right, and sixteen days after the removal of the left of these glands. "The exterior of the body was carefully examined, but no discoloration of the skin could be detected." On opening the abdomen the intestine looked like a gelatinous mass, and their walls were remarkably thin and transparent. The right half of the stomach was in a similar condition Dr. Harley believes that the degeneration of the stomach and intestines was owing to the injury done to the ganglionic system of nerves, especially to those branches supplied to the capsules by the solar plexus. We do not learn that a similar degeneration followed removal of the capsules, even where greater injury was done to the nerves and surrounding parts than in the operation now noticed. The animal rapidly recovered after the extirpation of the right capsule, although it was attended with the most difficulty. The left capsule, we are told by the operator, was extracted with the greatest facility. In another case, of a piebald rat, the operation, which consisted in the ablation of the right supra-renal capsule, was a tedious and disagreeable one, in consequence of the animal not having been rendered sufficiently insensible. As it lasted several minutes, there was little hopes of the animal surviving, but, contrary to expectation, it made a tolerably rapid recovery, and in six weeks, as it was in excellent condition, the other capsule was removed. In this case, as in that of a cat on which a similar operation had been performed, Dr. Harley was unable to find any very marked difference in size or appearance, as might, *a priori*, have been supposed; the left having sufficed during a period of six weeks to perform the function of the two capsules.

With regard to the connection of the supra-renal capsular function and bronzing of the skin, the author contents himself, for the present, with remarking that in the case of this piebald rat no increase of pigment was observed to take place.

The following observations of Dr. Harley militate strongly against the conclusions reached by Dr. Brown-Séquard, on the question of the survivals of animals after the loss of the supra-renal capsules. "Rats not only survive after extirpation of the supra-renal capsules, but even become strong and healthy after the removal of the spleen also. I have, at present, in my possession, some animals from which the spleen and supra-renal capsules were removed when they were a month old. Yet, notwithstanding this, they have grown up without any apparent modification of their functions having taken place, and are now fine specimens of the well developed adult animal." M. Philipeaux has been more successful; he has "removed the spleen, the supra-renal capsules, and the thyroid glands from the same animal, and it has afterwards recovered."

Dr. Harley thinks that from the experiments detailed by him, the chief of which we have introduced to the knowledge of our readers, the following conclusions may be drawn:—

"1st. The supra-renal capsules are not solely fœtal organs.

"2d. The supra-renal capsules are not absolutely essential to life.

"3d. The removal of the right is more generally fatal than the removal of the left capsule.

"4th. That convulsions do not necessarily follow the removal of the capsules.*

"5th. That the absence of their functions (in rats) is attended neither by great emaciation nor debility.

"6th. That when death follows upon the extirpation of the supra-renal bodies, it is in most cases the consequence of the injury done to the neighboring tissues, perhaps most frequently the mutilation of the ganglionic system of nerves.

"7th. Absence of the function of the supra-renal bodies is not proved to have any special effect in arresting the transformation of hæmatin, or in increasing the formation of blood crystals.

"8th. The suppression of the supra-renal capsular function is not attended by an increased deposit of pigment in the skin or its appendages (in rats.)

"9th. The problem of the connection of a bronzed skin and supra-renal capsular disease is more likely to be solved in the dead-house than in the physiological laboratory."

So far as inquiry into the subject has yet gone, the last conclusion of Dr. Harley would seem to be justified by a full and impartial survey of the premises, notwithstanding the more favorable light in which the physiology resting on vivisections on animals is placed by Dr. Brown-Séquard, to illustrate the pathology of the disease in the human body, as described by Dr. Addison. To this gentleman's clinical observations, then, we turn for information on a topic, which is at once new, curious, and instructive:—

"As a preface to my subject," writes Dr. Addison, "it may not be altogether without interest or unprofitable, to give a brief narrative of the circumstances and observations by which I have been led to my present convictions.

"For a long period I had, from time to time, met with a very remarkable form of general anæmia, occurring without any discoverable cause whatever; cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease. Accordingly, in speaking of this form of anæmia in a clinical lecture, I, perhaps with little propriety, applied to it the term 'idiopathic,' to distinguish it from cases in which there existed more or less evidence of some of the usual causes or concomitants of the anæmic state.

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* In a letter dated November 15, [1857,] Professor Virchow informs me that he has also extirpated the supra-renal capsules without having noticed the derangement of the central nervous system, mentioned by Dr. Brown-Séquard. I should add that I have seen two animals suffer from convulsions after extirpation of the capsules. One, a cat, died soon after having slight tetanic convulsions.

"The disease presented in every instance the same general character, pursued a similar course, and with scarcely an exception, was followed, after a variable period, by the same fatal result. It occurs in both sexes generally, but not exclusively, beyond the middle period of life, and so far as I at present know, chiefly in persons of a somewhat large and bulky frame, and with a strongly marked tendency to the formation of fat. It makes its approach in so slow and insidious a manner, that the patient can hardly fix a date to his earliest feeling of that languor which is shortly to become so extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted; the pulse perhaps large but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement; there is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness in attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth, and waxy appearance; the lips, gums, and tongue seem bloodless; the flabbiness of the solids increases; the appetite fails; extreme languor and faintness supervene; breathlessness and palpitation being produced by the most trifling exertion or emotion; some slight œdema is probably perceived about the ankles; the debility becomes extreme, the patient can no longer rise from his bed, the mind occasionally wanders, he falls into a prostrate and half torpid state, and at length expires; nevertheless to the very last, and after a sickness of perhaps several months' duration, the bulkiness of the general frame and the amount of obesity often present a most striking contrast to the failure and exhaustion observable in every other respect.

"With perhaps a single exception, the disease, in my own experience, resisted all remedial efforts, and sooner or later terminated fatally. On examining the bodies of such patients after death, I have failed to discover any organic lesion that could properly or reasonably be assigned as an adequate cause of such serious consequences; nevertheless from the disease having uniformly occurred in fat people, I was naturally led to entertain a suspicion that some form of fatty degeneration might have a share at least in its production; and I may observe that in the case last examined, the heart had undergone such a change, and that a portion of the semilunar ganglion and solar plexus, on being subjected to microscopic examination, was pronounced by Mr. Queckett to have passed into a corresponding condition. Whether any or all of these morbid changes are essentially concerned, as I believe they are, in giving rise to this very remarkable disease, future observation will probably decide.

"The cases having occurred prior to the publication of Dr. Bennet's interesting essay on 'Leucocythæmia,' it was not determined by microscopic examination whether there did or did not exist an excess of white corpuscles in the blood of such patients," pp. 2–4.

It was while seeking, but in vain, to throw some additional light upon this form of anæmia, that Dr. Addison stumbled, as he modestly expresses it, upon the curious facts which it is his more immediate object to make known to the profession in the short monograph which we are now turning to account for the benefit of our readers. Many stumble on facts, but for the most part put them to one side as of no interest, or, if retained, they are arranged among the *actæ curiosæ*, or help to form a string of party-colored beads, to be shown, occasionally, to an inquisitive friend. Dr. Addison, in a more philosophic spirit, noted the resemblance of the symptoms of several cases of disease, and then watched for any peculiarity of organic lesion on the bodies of those who sank under them. This peculiarity he found in alterations of the supra-renal capsules. One external and characteristic feature of the disease arrested his attention, viz.: discoloration of the skin, "sufficiently marked, indeed, as generally to have attracted the attention of the patient himself, or of the patient's friends."

> "This discoloration pervades the whole surface of the body, but is commonly most strongly manifested on the face, neck, superior extremities, penis, and scrotum, and in the flexures of the axillæ, and around the navel. It may be said to present a dingy or smoky appearance, or various tints or shades of deep-amber, or chestnut-brown; and in one instance, the skin was so universally and so deeply darkened, that, but for the features, the patient might have been mistaken for a mulatto."
>
> "In some cases, this discoloration occurs in patches, or perhaps, rather certain parts are much darker than others, so as to impart to the surface a mottled, or somewhat checkered appearance; and in one instance, there were, in the midst of this dark mottling, certain insular portions of the integument presenting a blanched or morbidly white appearance, either in consequence of those portions having remained altogether unaffected by the disease, and thereby contrasting strongly with the surrounding skin, or, as I believe, from an actual defect of coloring matter in these parts," p. 5–6.

The irregular distribution of pigment-cells is by no means limited to the integument, but is occasionally, also, manifest in some of the internal structures, as in the form of small black spots beneath the peritoneum of the mesentery and omentum—a form which in one instance presented itself on the skin of the abdomen.

> "This singular discoloration usually increases with the advance of the disease, the anæmia, languor, failure of appetite, and feebleness of the heart become aggravated; a darkish streak usually appears upon the commissure of the lips; the body wastes, but without the extreme emaciation and dry harsh condition of the surface, so commonly observed in ordinary malignant diseases; the pulse becomes smaller and weaker, and without any special complaint of pain or uneasiness, the patient at length gradually sinks and expires."

The connection between lesion of the capsules and the symptoms, as regards degree in both, is thus described by the author:—

> "When the lesion is acute and rapid, I believe the anæmia, prostration, and peculiar condition of the skin will present a corresponding character; and that whether acute or chronic, provided the lesion involve the entire structure of both organs, death will inevitably be the consequence."

Dr. Addison lays great stress on a correct and certain diagnosis, as the chief difficulty to be surmounted by further experience in this, as he believes, irremediable disease. At a very early period, when the capsules are less extensively diseased, the discoloration may doubtless be so slight and equivocal as to render the source of the anæmic condition uncertain. Here we must have recourse to negative evidence, and if we find, with marked anæmic disorder, an absence of its well-known sources, after an examination of the organs usually concerned, we may suspect with good reason the disease in question. Our belief in this effect will be increased if there be superadded a dark, dingy, or smoky-looking discoloration of the integument.

> "It must, however, be observed that every tinge of yellow, or mere sallowness, throws a still greater doubt over the true nature of the case; and that the more decidedly the discoloration partakes of the character described, the stronger ought to be our impression as to the capsular origin of the disorder."

Nine cases are recorded by Dr. Addison, in which, during life, the characteristic symptoms already described were present, and on dissection of the bodies after death, the supra-renal capsules were found to be greatly altered; in one case by simple inflammation, in the others by strumous or malignant deposit. One of the cases, occurring in 1829, is taken from Dr. Bright's Reports. No suspicion was then entertained of the very dark color of the complexion and other symptoms being connected with the only marked organic change, that of the capsules, found on *post-mortem* examination. Portraits of some of the dark-skinned patients, and colored plates of the morbid changes of the capsules are added to the text of the remarkable monograph of Dr. Addison.

This gentleman has been gratified in his wish to attract the attention of the profession at large to the curious facts which he has brought before them, and to enlist their co-operation, so as to have the subject "properly examined and sifted, and the inquiry so extended as to suggest at least some interesting physiological speculations, if not still more important practical indications." As relates to the physiological part, we have seen how Dr. Brown-Séquard and other French experimenters, and Dr. Harley, of London, have responded to Dr. Addison's wish. It remains for us to show how ably he has been seconded in regard to the pathological indications by Mr. Jonathan Hutchinson, in successive papers furnished by this gentleman to the *Medical Times and Gazette* for 1855 and 1856, (vols. xi., xii., and xiii., New Series.)

Mr. Hutchinson presents in the above journal, (March 3, 1856,) a tabular report of twenty seven-cases, illustrating the connection between bronzed skin and diseases of the supra-renal capsules. Eleven of them are taken from Dr. Addison's volume. He then proceeds to examine, in some detail, the peculiar symptoms and events that attend the fatal cachexia, of which and of organic disease of the supra-renal capsules, the bronzing of the skin is, he thinks, really indicative. Mr. Hutchinson asserts:—

> "That, notwithstanding the wide publicity which the theory has had given to it, and the great general interest which has been excited respecting it, the two following assertions may yet be made:—
>
> "1. No single case has yet been recorded, in which a well-marked bronzed condition of the skin existed and recovery ensued, nor any in which, after death, the supra-renal capsules were proved to be healthy.
>
> "2. No single case has yet been recorded in which, after death, both supra-renal capsules were found disorganized by chronic disease, and in which the skin during life had not assumed the bronzed condition."

In a note to the first of these assertions the author states, that in a "well-marked condition of bronzing" there ought to be some appearance of patches or mottling; and hence as wanting this characteristic, he is inclined "to ignore the seeming exception to the assertion furnished by case 3."

It is not enough, Mr. Hutchinson argues, for the arrest of function that parts of the supra-renal capsules, or even one of them be destroyed. If a considerable portion of their normal structure remains, their functions may be performed to such an extent as to prevent the manifestations of symptoms.

In less than three months after the announcement of the above dogmatic propositions by Mr. Hutchinson, an exceptional case was reported by Mr. Ogle at a meeting of the London Pathological Society, and is recorded in its Transactions, (vol. vii., 1856.) It was of a man, fifty years of age, who was brought into St. George's Hospital, laboring under ascites and anasarca. About ten weeks before entering the hospital he had suffered much from pain in the loins. This patient died in a paroxysm of dyspnœa. No kind of discoloration of the integuments was observable. On dissection, a large quantity of fibrous deposit was found within the substance of the supra-renal capsules and the kidneys; the renal and supra-renal veins were perfectly converted into fat. The supra-renal capsule was exceedingly large, owing to its extensive disorganization and occupation by soft deposits like that in the kidney. The abdominal viscera and lungs were congested; the heart soft and flaccid.

Dr. Fricke, of Baltimore, relates in this journal, for July, 1857, the outlines of a case of cirrhosis of the liver, and bronzed skin, but not so distinctly as to enable us to say to what extent or in what degree this color differed from or was confounded with that of jaundice, which latter is described in the advanced stage of the disease, or about three months before death, as universal. "As the case progressed, the principal phenomena exhibited were dropsy, hemorrhage, black urine, and bronzed skin." This last symptom was first observed in January—the patient died on April 29th, 1857. "At the commencement it was not well defined nor more decided than is often observed in cases of cirrhosed liver, but, after a time, became so deep as to attract decided attention. It was limited to the forehead, face, and neck, and almost as deep in hue as is found in the livers of remittent fever patients. One fact is worthy of notice. The demarkation between this color and that of the rest of the body was not clearly defined, but they merged into each other by degrees." The autopsy was made by Dr. Fricke, aided by Dr. Johnston. "Bronzed hue not so well marked, jaundice universal, and of a deep lemon tint, emaciation moderate, and legs œdematous. Heart and chest not examined. The abdominal cavity contained about one gallon of serous fluid, and the intestinal canal was filled with dark liquid blood. Kidneys congested and somewhat enlarged, otherwise healthy. Supra-renal capsules of natural size, hue, and consistence; no alteration whatever observable." The liver was much smaller than natural, and of a bronzy hue externally—surface irregular and nodulated.

Dr. Harley, whose experiments and views respecting the physiology of the supra-renal capsules we have freely introduced in the present argument, for such our readers will see is the stage the subject has reached, enters on the question of the pathology of these glands. Here he is again in the opposition, but with no caviling spirit. He strengthens his position with a goodly array of facts, which we shall now briefly notice. After adverting to the state of the question as it had been presented by Dr. Addison, Mr. Hutchinson, and others, and as may be learned from preceding pages of this article of ours, Dr. Harley tells us that "at the present moment the case is very different; several cases have been reported in various journals where extensive and even total destruction of the supra-renal capsules existed, unaccompanied by any discoloration of the skin. In proof of this, I may cite the following twelve examples." We introduce them here in an abbreviated state. Professor Friedreich* mentions two cases of amyloid degeneration of the supra-renal capsules, in which there was no bronzing or change of color in the skin. Mr. Davis,* of Bath, at one of the meetings of the Bath and British Association, reported two cases of extensive disease of the supra-renal capsules, without any bronzing of the skin. Professor Virchow writes to Dr. Harley, that he has met with several cases of tubercular deposit in one or both supra-renal capsules, and one case in which both capsules were destroyed by cancerous deposit, but without any bronzing or discoloration of the skin having been observed in any of them. An interesting case of this nature is described in Jones and Sieveking's *Pathological Anatomy.* Dr. Harley has himself examined one case of complete degeneration of the supra-renal capsules, without any bronzing of the skin having been noticed. Of similar purport is a case mentioned by Dr. Klob, assistant to Rokitansky, in a man whose skin and face had undergone no change in color. Reference has been made already to the case reported by Dr. Ogle. A case of cancer of the supra-renal capsules and of the other organs, with no discoloration of the skin, is reported by Drs. Peacocke and Bristowe, in the *Transactions of the Pathological Society,* (vol. vii.) They describe another case of the same kind—cancerous capsules and no discoloration. A very curious case is reported by Professor Martini, of Naples. It is that of a man aged forty, the father of three children; he died of phthisis. His skin was remarkably fair for an Italian; and yet, on *post-mortem* examination, the supra-renal capsules were found entirely wanting.† Dr. Brittan (*Brit. Med. Journ.*, February 6, 1858,) relates two cases of supra-renal capsular disease, in which no bronzing of the skin occurred. "A number of cases have been reported in the journals, where only one supra-renal capsule was diseased, (see cases mentioned by Ogle, Hutchinson, Wilks, Murchison, and others,) and where bronzed skin was sometimes present, sometimes absent; but I refrain from mentioning them, as they throw no light upon the subject."

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* Virchow's Archives, April, 1857, p. 389.

Here Dr. Harley closes the negative answer to the question—"Is disease of the supra-renal capsules invariably accompanied by bronzed skin?" He next proceeds to a consideration of the other question propounded by him, namely, "Is bronzed skin always associated with disease of the supra-renal capsules?" We shall follow him in this line of argument.

M. Puech communicates the case of a man, aged fifty-four, whose skin was observed to become gradually darker in color for a year and a half before his death. "The change of tint was accompanied by loss of strength, bad digestion, alternate diarrhœa and constipation. During a short interval he slightly improved, but afterwards he was seized with pain in the right iliac region, followed by black fetid stools. He subsequently died of peritonitis, from inflammation of the intestines. In this case, the bronzing of the skin was most decided upon the face, breast, abdomen, and anterior and interior of the thighs." Contrary, however, to the expectations of M. Puech, and others who saw the patient, the supra-renal capsules, after being minutely examined, did not exhibit the slightest alteration. Dr. Harley next quotes an abtract of Dr. Fricke's case, noticed by us in a preceding paragraph. Dr. Linton, Professor Simpson, Mr. George May, Mr. Hutchinson,[*] and Professor Virchow are named by Dr. Harley as relators of cases in which the skin was bronzed, and the renal capsules in a normal condition; and as far as their testimony goes, the second question propounded by this gentleman meets with a negative reply, and he deems himself justified in saying that discoloration of the skin is not always associated with supra-renal capsular disease. He adduces, in further confirmation of this view, the case reported by Dr. Sloane.

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* British Medical Journal, February 28, 1857.

† Comptes Rendus, December 1, 1856.

In speaking of the causes of bronzed skin, Dr. Harley draws from natural history and comparative physiology interesting instances of the difference of color of the skin in certain animals caused by modifications of light and season, acting, however, on constitutional peculiarities. The long retention of these peculiarities, under great difference of climate and atmospherical exposure, is observed among the different races of mankind. "Natural physiological changes occurring at different periods of life, also react upon the cutaneous function." The approach of puberty, and still more pregnancy, are examples to the point. Disordered chromatogenous function may exist without any disorder of the general health. "I might make mention," remarks Dr. Harley, "of other forms of discolored skin—such, for example, as the *melanopathia syphilitica*, *chloasmæ*, or *maculæ hepaticæ*, and even that which comes from prolonged exposure to the heat of charcoal, 'Ephelis ignealis,' of French authors; but I think that the cases I have already cited are sufficient to show that partial or even general discoloration of the skin occurs under such a variety of circumstances that it can scarcely be regarded as depending upon any one particular form of disease."

Under the microscope, a piece of bronzed skin taken from a patient whose renal-capsules were diseased, presents the very same appearances as the skin of the negro. "The pigmentary matter was deposited in the epithelium cells of the under layer of the epidermis—the rete mucosum, as it is sometimes called. The superficial layer of the epidermis, on the other hand, was almost entirely free of pigment." As a general rule,

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[*] Transactions of the Pathological Society, vol. vii. p. 341.

[†] Medical Times and Gazette, August 29, 1857.

"the coloring matter was not limited in its distribution to the nucleus, but spread throughout the cell. The nucleus was, however, more deeply tinged." Dr. Harley has also examined bronzed skin taken from a patient with healthy supra-renal capsules, and convinced himself that its microscopical structure was in every respect identical with that taken from the other patient whose supra-renal capsules were diseased.

We need not repeat Dr. Harley's creed respecting the relations of bronzed skin to diseased renal-capsules. It is inferrible plainly enough from all that we have introduced in his line of argument and illustrations. On the anatomical and physiological grounds already stated, he looks upon "the symptoms of anæmia, languor, debility, feebleeness of the heart's action, and irritability of the stomach, not as the result of the suppression of the functions of the supra-renal capsules, but rather as being occasioned by a diseased state of the solar plexus *per se*, or by an irritation of the ganglionic system of nerves caused by the sole proximity and intimate connection of diseased supra-renal capsules."

We now revert to the propositions laid down by Mr. Hutchinson, repeated on p. 208; but it is not necessary to point out the extent to which they have been weakened, if not rebutted, by the opposing counsel in the person of Dr. Harley. Before going any farther, let us, however, give Mr. Hutchinson, or the side he advocates, the benefit of testimony additional to that adduced by him in his tabular report of twenty-seven cases of bronzed skin and disease of the supra-renal capsules. Cases of the like nature have been reported by Dr. Baly in a lad aged eighteen years;* Dr. Adam Martin in a married female aged fifty years;† Dr. Tyndale Robertson in a laborer aged twenty-six years;‡ Dr. Edward Gibbon in a cabman aged fifty-two years;§ M. Trousseau in a coachman aged thirty-seven, a patient at the Hotel-Dieu, (Paris;) M. Malheur in a woman aged forty-eight years, at the Hotel-Dieu, (Nantes;) M. Cazenave in a man of intemperate and otherwise vicious habits, in the Hospital of St. Louis, (Paris;) Dr. Christie in a woman aged thirty-six years; W. C. in three cases of advanced phthisis;|| M. Sécond Feruel;¶ Dr. Addison in a female eighteen years of age, whose skin was darkened, almost blackened; Dr. Isaac E. Taylor in two cases at the Bellevue Hospital, New York; the first, a male laborer, aged twenty-two; the second, a male, aged forty-two. Of the above fifteen cases the connection between bronzed skin and diseased supra-renal capsules was demonstrated by *post-mortem* examinations. The same cannot be said of eight of the twenty-seven cases in Mr. Hutch-

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* Transactions of the Pathological Society of London, vol. viii.

† Brit. Med. Journ., May 15, 1858.

‡ Medical Times and Gazette, vol. xii.

§ Ibid, vol. xiii.

|| Ibid, for the preceding seven cases.

¶ Gazette Medicale, Oct. 4, 1856.

inson's tabular report, as of them no autopsy was made. Two were still living,—one reported as a case of recovery.

The interest which is attached to the discolorations of the skin, in the form of cachexia with anæmia, described by Dr. Addison, depends on the value of this appearance as an aid to diagnosis, which, considering the usually rapid course and fatal termination of the disease, ought to be made as early and with as much certainty as possible. In completion of what we quoted from that gentleman on this point, we shall now introduce the observations of Mr. Hutchinson and Dr. Taylor. The term "bronzing" was first used by Mr. Hutchinson. The color of the skin when thus discolored resembles strikingly that of a bronzed statue from which the gloss has been rubbed off. Pressure has no effect in causing its diminution. Dr. Taylor is of opinion that this hue is only characteristic of the more advanced stage of the disease; and even here, he thinks, the comparison of color would be more appropriate if one were to take for its subject a mulatto, or preferably, a West Indian. The shades described by Dr. Addison, in page 206, are quite characteristic when the disease assumes a chronic character; but, in the early stage, Dr. Taylor compares the discoloration to that caused by long exposure to the sun, and increasing to a darker hue. "It seems as a rule," according to Mr. Hutchinson's observations, "to commence first in patches with ill-defined borders, on those parts most exposed to the sun and to friction, the neck, the backs of the hands, the front of the thighs, the arms, etc. Around the nipples, and in other parts where pigment naturally abounds, it is generally well marked, while others, possessing little or no pigment originally, as in the palms of the hands, the ungual matrices, etc., remain as pale as ever. This tendency to show itself in patches, is strongly in support of the belief that the change is really one of deposit of pigment, which derives confirmation from the circumstance that, in not a few cases, the punctate or even patchy deposit of black matter was obscured in the mucous membrane of the mouth, and in the serous investments of the abdominal viscera." The author attaches great importance, as a pathogonomic sign, to the presence of blood stains on the mucous linings of the lips. In one of Dr. Taylor's cases, the line of demarkation between the face, which was discolored, and the scalp and ears, which were not affected, was very distinct; as was also the pigment on the lips.

The paleness of the conjunctiva, and of the matrices of the nails, in this disease, are in strong contrast with the yellow hue of the same parts in jaundice, looking to its general symptoms and the uniform diffusion of its peculiar tint. A sunburnt skin will be known by its appearing only on parts which are habitually exposed. "Patches of *pityriasis versicolor* sometimes remarkably resemble those of bronzed skin. Their limitation to the abdomen and chest, their defined outline, their furfuraceous surface, the slight itching which attends them, their contagious character, and, above all, the microscopic examination of the cuticle, furnish, however, abundant means by which to distinguish between the two." With common care the diffused brown muddiness of some forms of periodical fever, and of malignant cachexia, may be distinguished from the bronzed skin.

An examination of the skin, in one of Dr. Taylor's cases, was made by Dr. J. C. Dalton, Jr., with results analogous to those which are described by Dr. Harley at pp. 211–12. Dr. Dalton says, that the coloring matter was deposited in a granular form, and that it could not be distinguished from the pigment of a mulatto.

Among the symptoms which, next to bronzed skin, are to aid us in our diagnosis of the disease now before us, Mr. Hutchinson mentions *debility,* which manifests itself in an extreme degree, without any evidence of ordinary organic affection, or special functional disturbance. *Emaciation.*—The want of correspondence between the extreme debility and loss of flesh is one of the features of the disease. Dr. Addison's observation, that flabbiness of the solids rather than actual wasting, is the actual state of the patient, applies to the majority of cases. *Anæmia.*—In nearly all the cases there was an evident deficiency of the colored constituents of the blood; and in the two in which this fluid was examined under the microscope, it was found to be loaded with white corpuscles. "To the impoverished state of the blood is no doubt to be referred the breathlessness in exertion, the debility, the feebleness of the heart's action, and perhaps the irritability of the stomach." *Pulse.*—Its chief peculiarity consisted on its extreme softness and compressibility. *Tongue.*—It presents no appearance different from that met with in most states of debility. *Dyspepsia.*—In a majority of the cases great irritability of the stomach was present, marked by nausea and vomiting, and accompanied with a sense of pain, and sinking of the epigastrium. For the most part there was constipation, and in some instances diarrhœa. Often the patients had been pronounced to have had bilious attacks. *Urine.*—Although searches were made for the purpose, neither sugar nor albumen was detected. *Lumbar Pains.*—Aching, more or less severe, in the back and loins, was a symptom present in a considerable proportion of the cases; although in two of these there was disease of the vertebræ. "*Nervous Symptoms, Convulsions*, etc.—Symptoms referable to disorder of the cerebro-spinal functions occurred in several of the cases. In three, epileptiform convulsions preceded death. In one, failure of memory, and remarkable change in temper, was observed; and in a second, numbness of the fingers, legs, and the tip of the tongue, had been present. In one, the man had suffered from tic douloureux." It will not be uninteresting or uninstructive to connect these symptoms of great derangement of the nervous system with analogous disturbances in animals after ablation of the supra-renal capsules, as practiced and recorded by Dr. Brown-Séquard. *Odor of the Body.*—Dr. Addison makes no allusion to this symptom, which was noticed in two of the cases tabulated by Mr. Hutchinson. In one case there was a very offensive odor given out from the body for a few weeks, and, in the other, only for a few days previous to death. In this latter the odor was less unpleasant from that portion of the skin covered with clothing than from the exposed surface, as for instance, of the neck.

Much yet remains to be learned to complete the diagnosis of the disease of the supra-renal capsules, or of the contiguous nervous plexuses affected by their lesion. Dr. Addison, at a meeting of the London Medico-Chirurgical Society,* in describing a remarkable case which he had seen of discoloration of the skin amounting almost to blackness, in a young lady aged eighteen, associated with extensive lesions of the supra-renal capsules, expressed his entire belief that the disease proceeded from the morbid change of these organs alone. He added, and his remarks must be received as highly suggestive: "We know, however, that these organs were situated in the direct vicinity and in contact with the solar plexus and semilunar ganglion, and received from them a large supply of nerves; and who could tell what influence the contact of these diseased organs might have on these great nervous centres, and what share this secondary effect might have on the general health and on the production of the symptoms presented?" Dr. Addison, on the same occasion, disclaimed attaching any importance to the discoloration of the skin. He believed that the disease might occur, and had occurred, without any change of this organ.

As regards the "mode of death," speaking generally, "we may say that the phenomena attending death are those of utter prostration of the vital powers, not unfrequently complicated with disturbance of the nervous functions."

The prognosis in a case of true bronzing of the skin is always unfavorable. After the expression of such an opinion, little can be expected from treatment. There is reason for believing, however, that various as may be the morbid textural changes of the supra-renal capsules, they may be supposed for the most part to have originated in or to have been closely allied to inflammation. Were we to admit this hypothesis, we should be justifiable in using such means as are believed to possess an influence over that process. Mr. Hutchinson suggests the use of mercury in small doses, or that of the iodide of potassium, while the patient's strength is in the mean while supported by nutritious but non-stimulating food.

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* Reported in the Medical Times and Gazette, February 20, 1858.

The *morbid anatomy* of the supra-renal capsules, investigated by Mr. Hutchinson, shows: 1. Acute and recent inflammation, ending in abscess, in one case. 2. Atrophy, with fibro-calcareous concretions, in seven cases. 3. Conversion of the organs into a kind of fibroid structure, with great enlargement and induration, with entire loss of healthy tissue, in two cases. 4. The deposit of tubercle in three cases, and, coincidently, great enlargement of the organ. 5. Cancer in six cases. "In all it was secondary to the same disease in other organs. In four it affected but one organ, and in two both were involved. In but one case was complete disorganization of both affected." A remarkable symmetry of disease appears to have existed in all except in the cases of cancer.

Serious blanks are yet to be filled up in the history of the supra-renal capsules. We are ignorant of their functions; nor are we able to speak in decisive terms of the varieties of appearances compatible with health; and we are entirely at a loss for the etiology of their diseases. Future observers can hardly be too minute in their description of the actual symptoms of the disease which is marked by discolored or bronzed skin, nor of the complaints and all the circumstances preceding it. Especially is it desirable to improve the diagnosis so far as to enable the practitioner to ascertain the existence of the supra-renal capsular disease in cases in which there is no discoloration, or at a stage antecedent to the appearance of this change in the skin.

Art. II.—*Lectures on the Diseases of Women.* By Charles West, M.D., Physician Accoucheur to St. Bartholomew's Hospital, and Physician to the Hospital for Sick Children. Part II.: Diseases of the Ovaries, Vagina, Bladder, and External Organs. 8vo., pp. 309–490. Philadelphia: Blanchard & Lea, 1858.

A review of the first part of this work was presented in our July number for last year, and we congratulate the profession upon the appearance of the second part, as it completes a valuable work upon an important branch of practice, and is the production of a man of great ability and wide experience. Our remarks there preclude the necessity of dwelling here upon Dr. West's characteristics as a writer or a teacher; he has been for some time before the profession; and in commencing our examination of the present work, we need only remark that it presents the same felicity of style, the same candor of examination, the same caution in statement, and the same absence of anything savoring of partisanship upon questions not yet decided, which characterized his former volume. The results of his own experience in each disease are given so clearly and carefully as to make his works specially valuable in this respect; he says, in the preface to the present volume, "I have not ventured to teach concerning matters with reference to which I feel myself to be still altogether a learner; while I have always regarded mere compilation, uncontrolled by experience, as more apt to perpetuate error than to diffuse truth." He shows, too, such a modest distrust of himself where his experience conflicts with that of other eminent men in the same branch of practice, that while the reader is charmed with a trait so pleasing and so rare, the conviction is forced upon him that he is following a careful and judicious guide.

The first part of the work treats of diseases of the uterus; this volume comprises affections of the other female sexual organs. The first two of the twelve lectures it contains are occupied with the inflammation and consequent abscess of the uterine appendages, and with uterine hæmatocele; the last three are upon diseases of the bladder, vagina, and external organs. In the seven remaining lectures diseases of the ovaries are discussed, and these so far exceed all others in interest and importance, that we shall occupy what space we have at our disposal in examining the views of the author upon the different points connected with them.

One lecture is taken up with the subject of inflammation of the ovaries, acute and chronic, and serves as an introduction to the more important diseases of these organs. But a single case of acute inflammation has come under the author's observation, and he does not therefore occupy much space with this disease, but in regard to the chronic form, the most important fact is that he cannot coincide with those who look upon it as a serious disease, occasioning much local and constitutional suffering, giving rise to great disturbances of menstruation, and being the most frequent cause of sterility. Pain, he says, is not so correct an index of the extent and nature of diseases connected with the sexual diseases of women, as in other cases; nor does the appearance of the tissues after death warrant the belief that chronic ovaritis is a frequent disease, or one causing so many different ailments during life. He can no more agree with those who ascribe so many female complaints to chronic ovaritis, than with those who attribute them to ulceration of the cervix uteri; he agrees rather with Churchill in calling a certain class of cases in which the principal symptom is pain in one or the other iliac region, aggravated during menstruation, as depending upon ovarian irritation, although he prefers the simpler term of *ovarian pain.*

The lectures upon ovarian tumors and dropsy are the ones to which every reader will turn with the greatest interest. To this subject as much attention is now paid as to any other in the domain of medicine,—the difficulties inherent in the subject from the differences in the form of disease, the different conclusions to which different and seemingly equally qualified observers have arrived, and the warm partisanship felt by many advocates of the different remedial measures proposed, have all conspired to make everything upon the subject coming from a good source of the greatest interest to the profession. This importance and these difficulties of the subject which we have glanced at, and which rush into the mind of every professional reader the moment he turns his attention to the subject, are so well presented in the introductory remarks that we cannot avoid quoting them :—

> "They occur in the young and the aged, in the single and in the married, in the sterile and in women who have given birth to many children. They are formed, sometimes, by simple cysts containing serous fluid; at other times they are composed of solid matter; while in very many instances their structure is identical with that of growths which morbid anatomists have unanimously designated malignant. Their rate of increase is sometimes quick, at other times slow, and the disease which had seemed in course of rapid development becomes occasionally stationary, and so remains for months or years; while now and then nature herself interferes, and excelling all that the most skillful physician could do, completely takes away the ill which medicine is usually impotent to cure. Their diagnosis, in some cases most easy, is in others attended by extreme difficulty; and yet there are scarcely any ailments in which so much is involved in a right decision. The determination that the supposed disease is in reality due to the existence of pregnancy, or that the suspected pregnancy is but the evidence of disease, often has moral consequences which touch more nearly the profoundest source of human happiness or misery than any which would follow the mere assurance, though never so positive, of coming health, or the admission that the future has no other prospect than that of a lingering and painful death. The prognosis to be formed, and the treatment to be adopted, bring with them, too, their own peculiar difficulties. Recovery, when there seemed no ground for hope; death, when little had appeared to call for apprehension; medical treatment rejected because it had been proved inefficacious; surgical proceedings shrunk from, because they are known to be hazardous; additional facts scarcely seeming to widen our experience, or serving only to detect the fallacy of some loudly-vaunted plan of cures,—such are the uncertainties, and such the difficulties that meet us when we propose to ourselves the inquiry—What shall we do? In short, there are no diseases whose pathology is more imperfect, whose symptoms are more fluctuating, whose diagnosis is more obscure, or whose treatment is founded on more uncertain data, than those very diseases of the ovaries, which are yet so important, and to whose study I must now beg to call your most patient attention."

Leaving this general sketch of the subject—as faithful as it is sad—let us turn to particulars. Some of these we shall only glance at; with many we shall not occupy any time at all. Upon the course and causes of the disease, its influence upon sexual health, the manner in which they prove fatal, and the different modes in which nature, though rarely effects a cure, the work contains full details, but they need not detain us here. In classification the author follows Paget, and treats of these tumors under the two divisions of Simple, or Barren Cysts, and Compound, or Proliferous Cysts; this plan he thinks not only "anatomically correct, but practically convenient," and he describes at length the different forms of the disease from their origin through all the stages of their development; a description which corresponds with the twenty-second and twenty-third lectures of *Paget's Surgical Pathology.*

In regard to the relative frequency with which disease attacks either ovary, a table is given, which may be found on page 850 of the first volume of this journal. This table exhibits a very great preponderance of disease in the right ovary, but is stated to show only a very rough approximation to the truth on this point, as the sources of fallacy are so great during the life of the patient, that no conclusion can be relied upon which is not based on post-mortem examination. The result is therefore given of forty-one cases by Scanzoni, fifteen by Dr. R. Lee, and nineteen by the author, in which the condition of the parts was truly ascertained by examination after death; these seventy-five cases show twenty-six of disease of the right side alone, twenty-three of the left, and twenty-six in which both ovaries were affected; the author does not therefore believe that there is any special liability of one ovary to disease more than the other.

Scanzoni is stated to be the only author who has attempted an estimation of the relative frequency with which the different forms of ovarian disease appear; to his forty-one cases Dr. West adds nineteen of his own, and the result is shown in the following table:—

Simple cysts	in 15 cases.
Fat cyst	in 1 case.
Compound cysts and cysto-sarcoma	in 23 cases.
Colloid, or alveolar tumors	in 19 cases.
Cancer with cyst formation	in 2 cases.
Total	60 cases.

The symptoms of ovarian tumors and dropsy are considered at length under five heads: functional disorder of the organs as shown by various derangements of menstruation, pain, the effect of pressure, and the cachexia, which is so striking an accompaniment of some forms of disease; the fifth division, including those symptoms which arise from our efforts to cure the disease, or to prolong the life of the patient, such as peritonitis and cyst-inflammation following tapping. In treating of diagnosis, the points of difference between these diseases and others likely to be confounded are fully and plainly stated; particularly in regard to inflammation of the broad ligaments and its consecutive abscesses, fibrous tumors of the uterus, misplacements of that organ, distension of the bladder, and tumors of the liver and spleen, while rarer forms of disease which have sometimes occasioned mistake are mentioned, and the means of distinguishing these tumors from the physiological condition of pregnancy is not of course forgotten. There is probably no disease coming under our professional care in which diagnosis is more difficult than in the one under consideration; we have not merely to distinguish the tumor from diseases of other organs, and can neither satisfy ourself nor our patient by the statement that it is the ovary which is affected, but must make such a diagnosis as will in some degree serve as a foundation for prognosis, and if we are further to undertake any surgical proceedings for its cure, the highest considerations which can affect ourselves and our patient demand that there shall be no error in regard to the nature of the disease. Upon this point the author is earnest and impressive, warning us not to take any information second-hand, but to rely alone upon that obtained ourselves, and by careful and repeated examinations:—

> "That fæces in the large intestines have been taken for them; that fat and flatus have raised a suspicion of their presence; that the abdomen even has been opened to remove a tumor which was found to have no existence, proves only how large is the possibility of error, how vigilant must be our care, if we will avoid a danger which the wisest have not always been so fortunate as to escape."

The fact is stated, among other instances of mistake, that Boinet once injected a solution of iodine into the peritoneal cavity with fatal result, supposing he was dealing with a case of ovarian dropsy; but far more striking, and far more likely to be remembered, is a "painful case" which occurred under the author's observation, the details of which are given. The patient was a girl about seventeen years of age, who was admitted into St. Bartholomew's Hospital, supposed to be suffering from ovarian dropsy, with which diagnosis the signs, negative as well as positive, seemed to agree perfectly; at the second tapping ten ounces of a solution of iodine were injected, which produced fainting and other alarming symptoms, and caused death in sixteen hours. The post-mortem examination showed cirrhosis of the liver, which had produced ascites, while the uterus and its appendages were healthy, and no tumor was to be found. The occurrence af such a case in a metropolitan hospital, with a corps of experienced surgeons and obstetricians, most forcibly teaches, as the author well remarks, the sleepless watchfulness necessary to guard from error, and "the importance of not taking anything upon trust, nor of allowing our judgment to be swayed by any previously expressed opinion as to the nature of the disease."

The treatment of the disease is opened cautiously, and a deep feeling is shown of the difficulties which surround it, arising from the nature of the complaint itself and from the conflicting experience of different observers. In continuing the subject he exhibits such a manifest desire to state fairly the merits of each plan, such an absence of all partisanship, and makes such candid admissions of the necessity of more facts to enable us to judge definitely of many points, that the warmest advocate of any particular plan of treatment cannot find fault, while the opinions expressed are so well sustained by statistics that the unbiased reader will not fail to be convinced of their truth. He lays down the principle in the beginning, that the danger of a disease should never be lost sight of in judging of the expediency of interference,—that if present suffering is not great, and a rapid advance not certain, "we should hesitate to advise any proceeding by which, though perfect cure may possibly be wrought, yet, on the other hand, life may be cut short suddenly." The statistics of the duration of the disease are then given, and they show that in sixteen out of one hundred and seventy-three cases, nearly one in seven, life continued from ten to fifty years after the commencement of the disease; it is therefore evident that "one year and fifty years cannot both truly represent the time occupied by the same disease in running its course," and it shows what morbid anatomy had done before, "that under this name several different diseases have been included, having different tendencies, warranting a different prognosis, and calling for different modes of treatment." In viewing this fact with reference to any particular mode of treatment he continues:—

> * * * "We must consider it with reference to the special form of the affection with which, in each separate case, we have to do. The question cannot be propounded as to whether this or that plan of treatment is suitable for ovarian dropsy; but, given a certain form of ovarian disease, is this or that proceeding expedient or allowable; or is it easier to do nothing, or to palliate; or is the attempt to do more justifiable; and when at length the necessity for interference of *some* kind becomes absolutely unquestionable, are the risks even of palliative proceedings so considerable as to warrant a greater hazard being run for the chances of a perfect cure?"

The classification of these cases for treatment is not based by the author upon any particular symptoms present, nor wholly upon the anatomical character of the tumor, but is entirely arbitrary and consists of three classes:—

1. Cases which *may* be let alone.
2. Cases which *must* be let alone.
3. Cases *justifying*, or *absolutely requiring interference.*

These cases belong to the first class in which the tumor does not exceed the size of the two fists, does not seriously disturb the functions of the pelvic viscera, does not cause much suffering, and is not rapidly increasing. But by *letting alone*, the author does not mean that nothing at all is to be done for such cases, and that we are to abandon the patients, trusting the issue to fortune. There are two indications to be fulfilled which are so important as to deserve to be constantly kept in mind and steadily pursued; the general health should be carefully maintained, and congestions of the pelvic viscera prevented by every possible means. Both require hygienic measures more than medicines:—

> "The first indication, I conceive, implies the avoidance of all such proceedings as courses of mercury, of iodine, of iodide of potass, or of liquor potassæ, agents of whose power in retarding the development of ovarian cysts, there is scarcely any evidence, while of their injurious influence on the constitution, when long continued, there is the most abundant proof."

The second indication requires unusual care during the menstrual periods, that the physiological congestion of the pelvic organs, then taking place, may be restrained as much as possible, by attention always to the state of the bowels, leeching when requisite, and the application of a properly-fitting bandage.

The cases of ovarian tumor which *must* be let alone, are those, "for the most part, of rather rapid growth, whose irregular nodulated surface and whose solid non-fluctuating mass suggests the idea that they are not mere compound cysts, but productions of a malignant character." In these cases there are also present evidences of a marked cachexia; the general health was broken down before the tumor had attained sufficient size to interfere with nutrition, either by the amount of sustenance withdrawn from the circulation for its own growth, or by interfering with the functions of the stomach by pressure. This class is speedily dismissed with the sad reflection that "the cases which seem most to call for help are those in which it is least possible to afford it, while it is in precisely those which may most safely be let alone that interference has the best chance of success."

The consideration of the class between these two extremes, consisting of those cases which justify or demand interference, introduces the more decided measures which have been resorted to for the cure of the disease or the prolongation of the life of the patient. The different views of the profession upon the period of time at which tapping is justifiable are first given; some being influenced by the immediate dangers of the operation, the rapidity with which the cyst refills, and the very small number of cases in which it proves curative, postpone it until compelled by the urgent symptoms arising from the size of the tumor; others relying more upon the few cases of cure and the many in which, by being frequently repeated, it has prolonged life to its usual extent, resort to it at an early period. But in fact the question cannot be considered or decided upon alone; to simple tapping has been added the injection of the cysts with iodine, and other measures have been proposed and put in force to effect a radical cure. Until the relative mortality and the proportion of cures of these different modes are given, we cannot decide upon the time at which tapping may be performed with the greatest benefit to the patient. The author acknowledges that future experience may modify or completely change his opinion upon this point, and gives the following as his present views:—

> "My present belief, however, is that the dangers of the operation have on the whole been over-estimated; and further, that while in cases where the amount of solid matter in the growth is considerable, the rule which prescribes the postponement of the operation to the latest possible period is a sound one; it will probably be more expedient in the case of simple ovarian cysts to tap early, before the growth had acquired a large size, and before the constitutional powers of the patient have seriously suffered."

The immediate dangers of tapping are twofold: *shock* and *inflammation of the cyst.* These are both considered at length, and tables are given showing the length of life after the operation and the relative mortality of each repetition of its performance; of 130 cases derived from other writers, 34·7 per cent. proved fatal in the course of six months after the operation; of thirty-one cases under his own care, three proved fatal very soon. But an important caution is here given in regard to deducing any conclusion from hospital statistics; the class of persons who apply to such institutions for relief; the advanced stage of disease in which most of them enter; the disappearance of the cures, while the failures are sure to be noted, all tending to increase the unfavorable side of the question,—render statistics, drawn from hospital experience, unreliable as guides to the truth of any question concerning the mortality of a given operation.

> "Almost in proportion as experience concerning this operation is derived from hospital practice, or from observation in private, does the estimate of its danger appear to be increased or lessened, a circumstance which seems to show that the hazards of the operation depend at least as much on the conditions that surround the patient as anything inherent in the proceeding itself."

There are five modifications of tapping which have been proposed to effect that which the simple operation cannot be relied upon to do—a radical cure of the disease. We shall give the opinion of the author upon each of these:—

I. *The application of light bandages after the evacuation of the cyst.* This mode has been pursued by Dr. Baker Brown, who at first used active diuretics and other medication in addition to the mechanical means. As a means of retarding the re-accumulation of the fluid, Dr. West thinks well of it; but as a curative measure, can place no reliance upon it. It is requisite to persevere in it for some time, and is said to be peculiarly adapted to simple cysts—just the class of cases, as the author remarks, in which a cure is most likely to follow simple tapping, and of which his experience give two instances.

II. *The subcutaneous puncture of the tumor* has been suggested, upon the supposition that the fluid would be absorbed by the peritoneum without danger to the patient; but the fluid is often such as to render this impossible, while any exploration for the purpose of ascertaining its nature violates the conditions of the proposed mode of cure by the admission of air.

III. *Puncture of the cyst through the vagina.* The peculiar advantage of this plan is that from the dependent position of the wound in the cyst, its contents are completely evacuated and thus adhesion is far more likely to follow and a permanent cure result. It is best adapted to simple cysts of a moderate size. The objections are stated to be—1st. The danger of wounding the bladder, from its altered shape and changed position, is very great, "with no very great unskillfulness on the part of the operator". 2d. In compound cysts there is a much larger amount of solid matter at the lower part of the tumor, and we may not therefore succeed in emptying it so well as through the abdominal walls. 3d. From the arrangement of the blood-vessels the danger of hemorrhage is much increased by puncture near the pedicle.

IV. *Keeping the cyst empty* either by means of a tube or by a fistulous opening. There are three modes of effecting this—the tube being passed through the vagina, through the abdominal walls, or the fistula being made through them, and the excision of a portion of the cyst. The first was the favorite method of Kiwisch, and was followed by his successor Scanzoni, who speaks so highly of it in his *Handbuch der Krankheiten der Weiblichen Sexualorgane*, and gives such favorable statistics of it, that we ardently hoped to find corroborative testimony of its value. Scanzoni mentions fourteen cases, in eight of which a perfect cure followed this mode of treatment; three of the patients were lost sight of, one died of typhus fever two months after the operation, and death did not result from it in any case. The author has operated in this way upon three cases, one of which proved fatal from consecutive inflammation, one was lost sight of after two months, during which time there was no re-accumulation of fluid, and the other remains in good health with a fistulous opening from the cyst to the vagina. With the plan of opening the cyst through the abdominal parietes and stitching its edges to them, the author's experience extends to two cases, in both of which it was the termination of an incision made with the intention of extirpating the disease, had not adhesions prevented; both cases proved fatal, one in ninety-six hours, the other in seventeen days. For information in regard to excision of a portion of the sac, reference is made to the writings of Brown, Atlee, and others, as no cases have come under his observation.

V. *Iodine injections into the sac.* Occasional notices in the journals of cases treated in this way, at St. Bartholomew's, have naturally excited an interest to learn the author's views upon it, and the results of his experience. It is his favorite plan, his experience, and that of others, showing a less number of deaths, and a greater proportion of cures, than by any other mode of treatment, although it is admitted that further experience and more precise information are necessary to settle accurately its relative value, which is not surprising, since ten years have not yet elapsed from the publication of the first reports of cases. The statistics of Boinet are given in full; they show the result of forty-five operations on forty-four patients, of whom twenty-eight were between the ages of thirty and fifty, nine below the former age, and eight above the latter. These cases gave thirty-one cures, five failures, and nine deaths.

> "In thirty-four of the cases the cysts were simple; in eleven, compound. All the successes occurred where the cyst was simple; but three deaths also followed the injection of simple cysts. All the operations on compound cysts failed; and six of them were followed by the patient's death; though certainly in many of these cases death would have taken place as soon, possibly even sooner, if interference had not been resorted to."

The author has seen eight cases of iodine injection, the full particulars of which are presented in a table. A positive cure is reported in but one case, while in two others no re-accumulation took place until after eighteen months or two years; the operation did not cause death in any case under the author's observation.

The injection recommended for use consists of five parts of iodine, five of iodide of potassium, fifty of spirit, and one hundred of water, prepared at the time it is to be used. The presence of spirit is supposed to retard the absorption of the active agent, and, therefore, to prevent or lessen the consequent *iodism*, characterized by great abdominal pain, cold extremities, a frequent and feeble pulse, and all the symptoms of extreme depression. As another means of avoiding these dangerous symptoms, he removes the injection after it has remained ten or fifteen minutes, being decidedly opposed to the plan pursued by some, of leaving it in the cyst.

The very favorable results obtained by Simpson and Velpeau with this mode of treatment are alluded to, and regret expressed that the former has not stated his experience definitely enough to be available in a numerical statement. The objections of Scanzoni are considered; and in summing up the author acknowledges himself much pleased with iodine injections, and anxiously awaiting that which he acknowledges to be necessary—further experience, and especially an increase of a knowledge in regard to the discrimination of cases to which they are best adapted.

> "The uncertainty as to the cases which will bear the iodine injection well, as distinguished from those in which cyst-inflammation or profound iodism will be excited by it, is a drawback from its value which this operation shares with every other proceeding for the cure, or even for the temporary relief, of ovarian dropsy."

In commencing the subject of ovariotomy, the last great remedy for the radical cure of the disease, a sketch of the history of the operation is given, and the author then plunges into statistics. He gives credit to Dr. Atlee, of this country, for having published the first table of cases upon this subject, and for having furnished much valuable information; Fock, a German writer, is, however, his great authority, having published a collection of all reported cases up to eighteen months before the time of writing. This collection gives 292 cases, in 200 of which extirpation was performed, and in 92 only attempted. The following is the summing up:—

> * * * "These 200 cases of actual extirpation of the ovary yield 111 recoveries to 89 deaths; or, in other words, the mortality is 44½ per cent., or not very far short of half the number of persons in whom the operation is completed die from its effects. But, besides these, there are 92 cases in which the operation could not be completed, on account of the presence of adhesions, or of the tumor having some other situation or other attachments than was supposed beforehand, or in which some even greater diagnostic error was committed, and the very existence of the tumor was found to be a mistake. Of these 92 patients 31 died, or 33·6 per cent., or 1 in every 3; but 9 of those who survived, after passing through great perils, are reported to have been more or less completely cured of the disease. Putting all the cases together, it seems that of 292 recorded instances of the operation being attempted, 120 ended in death, and 92 in failure; or, in other words, the chances are two to one that the operation will be accomplished; but, if it succeeds, they are nearly equal that the patient will die; and if it fails, the prospect of her surviving the fruitless interference is only double that of her sinking in consequence of it."

A few pages farther on, where the author compares the mutability of this operation with that of the Cæsarean section, a note is appended, containing the results of all the cases of ovariotomy which have been performed in Germany, a country where, for various reasons, it is "probable that all cases, unfavorable as well as favorable, will be reported in greater proportion than elsewhere." The cases are 64 in number, and they yield 12 radical cures, 46 with fatal issue, and 6, the "benefits of which were either questionable, temporary, or turned out utter failures;" thus giving a mortality of 72 per cent. compared with 63; or, according to some, 66·6 by the Cæsarean operation. Nor has the experience of the author been any more favorable; he has seen five cases, two of which are here published for the first time; in all these cases "the operation was undertaken after much consideration, with the approval and under the direction of surgeons of large experience and undoubted skill, but who in every instance were baffled in their attempt."

In continuing the statistics, tables are given of the time at which death occurred after the operation, the different accidents which caused it, the ages of the patients, and of other particulars of interest. The opinion held by some advocates of the operation, that the mortality is in course of diminution, and that the future will show more cures than the past, is then examined; from the figures shown by later records, compared with the earlier ones, the author cannot think this view correct. It is reasonable to suppose that such improvement will be more personal than general—the individual operator who is favored by the number of cases which may fall into his hands, may be able to point with pride to convincing evidences of increased skill, but the nature of the operation seems to preclude that diminished mortality from its performance, which is the case with other operations, dexterity in which can only be acquired in the dissecting-room.

The relative mortality of the two modes of operation, by the large and by the small incision, is next considered, the statistics of Lee, Atlee, and others, being given. It has been held by the advocates of the latter that the mortality is much less than by the former; to this view the author also dissents, and thinks that while early statistics gave very favorable results, later ones show little, if any, difference between the two. It is the amount of interference which has far more influence in deciding the fate of the patient than a few inches more or less of external incision; this is strikingly shown by tables of the comparative results in simple and compound cases, of which we append one:—

	Recoveries.	Deaths.
Simple cysts	31	12
Compound cysts, cysts with solid matter, and solid tumors .	62	56
	93	68

The absolute and relative mortality of the operation having been given, and every fact presented which can be expressed by figures, a conclusion is drawn unfavorable to the operation of ovariotomy, upon three grounds:

1. The rate of mortality not diminishing; and,
2. The high rate of that mortality;
3. The utter impossibility of forming a prognosis in any given case.

> "To the best of my knowledge, there is no other operation in surgery concerning which the chances are nearly one in three that some unforeseen difficulty will prevent its completion, or that a third of the abortive attempts at its performance will end in the patient's death."

The arguments advanced by the advocates of ovariotomy, that the rate of mortality from it is no greater than from some other operations which are frequently performed, is then considered, and we think dealt with most judiciously. The ground is taken that there can be no comparison between operations essentially dissimilar in their nature and in the circumstances under which they are performed; the mortality from ovariotomy can, therefore, no more be compared with that from amputation at the hip-joint or ligature of the subclavian artery, than with that resulting from tracheotomy in croup. Without pressing the strong points that most other operations can be completed while this must often be left unfinished, that the dangers of other operations can be estimated beforehand, while the greatest difficulties in this are often not discovered until it has been commenced, he thinks that ovariotomy should be tested rather by a comparison of its results with tapping, iodine injections, and other modes of radical cure, rather than with those operations which resemble it only in the high rate of mortality attending their performance.

We have said that the decision of the author is adverse to the operation of extirpation of the ovary. Should it be concluded, therefore, that he is opposed to its performance under any circumstances, and expressed his decision with the tone of one who felt that there was nothing which had eluded his research or escaped his observation, the utmost injustice would be done him. The candor with which he acknowledges that further experience and more careful study are necessary before the question can be settled, is an excellent example of one of his best characteristics. We have already seen that his opinion is formed in great part upon the statistics of the disease, and he evidently feels that while figures are admirable guides to a general result, they are of little value at the bedside in forming the prognosis of the particular case then before us. "*Non numerandæ, sed perpendendæ sunt observationes,*" said Morgagni, long ago, and the saying is especially applicable to ovarian disease. The adverse decision is, therefore, not an absolute one, nor one given as upon sufficient grounds to serve as the expression of the profession in general, but as the conclusion of the individual upon the facts at present collected, while he admits that further experience and observation are absolutely necessary. Until these are obtained the operation must take its place "by the side of those exceptional proceedings, the expediency of which must be determined by each one for himself after a careful consideration of the peculiarities of the case and the idiosyncrasies of the patient." In this respect he presents a marked contrast to Scanzoni, whose denunciation of the operation and those who undertake it may be found on p. 855 of the first volume of the REVIEW; the desire of the patient for the operation, after the facts were candidly presented to her, would not, with him, have any weight, or be any justification for an attempt at extirpation; yet, to our mind this cannot be thrown out of the scale, so long as we allow to patients the absolute right to refuse an operation, such as amputation of an injured limb, where we can assure them almost positively that the operation will save life. But for the benefit of all who are inclined to ultra views upon this or any other subject, we quote the concluding paragraph of the lectures on ovariotomy:—

> "One remark I cannot refrain from making in conclusion on the grievous injury that is done both to the advance of medical knowledge, and to the standing of our profession with the public, by the practice of treating some of these questions as though they were questions of moral right or wrong. It would seem, from what has sometimes been said on the subject, almost as if ovariotomy could not be defended save from some sinister end, nor its expediency be doubted except from a moral obliquity rendered excusable only by hopeless dullness. Belief in each other's integrity of purpose seems to me essential to our eliciting truth by discussion; and I see no reason why I am to suspect another of being less mindful of our commom duty to humanity, because he tries to relieve suffering or to prolong life by some means in which I have not the same confidence. The *odium theologicum* has at least age and respectability in its favor; I fear the immortal quarrel between Dr. Slop and Susannah has gone far to render the *odium obstetricantium* simply ridiculous."

So near the end of our task, we are sorry to be obliged to find fault: yet complete as has been our satisfaction heretofore, there is one point which justice to individual and national reputation compels us to mention. We turned to the subject of vesico-vaginal fistula with the most lively interest, as we suppose nine-tenths of the readers in this country will do, and were deeply disappointed to find its treatment dismissed with a single paragraph, and without any mention of what is justly considered one of the greatest improvements lately made in surgery. That details of the surgical proceedings necessary for the cure of this disease were omitted did not surprise us, for they are not within the author's plan, but a course of lectures, printed for the benefit of students as well as practitioners, should certainly contain some notice of all considerable advances lately made in the branch of which they treat, and indicate where such information may be found, as it is not in their province to furnish. That Dr. Bozeman's button-suture is not mentioned, nor any indication given that any advance has been made in this operation beyond the improvements made by Dr. Sims, from whom we have not the slightest wish to withhold the honor which he so justly deserves, is cause for great regret, and we believe will be deeply felt in this country. The omission is unaccountable, for the operation had been performed in London by Baker Brown and others, before the concluding chapters could have passed through the press, and we confess ourselves unable to frame an explanation which carries with it a reasonable amount of probability.

We trust that this is not the last time we shall be called upon to notice Dr. West's labors as an author; his talents and his opportunities are too great to be confined to the walls of a hospital or the limits of a class of students, and the facility with which he expresses his knowledge renders it doubly desirable that he should continue to work for the benefit of the profession at large. We consider his volumes on Diseases of Women a most excellent treatise upon that branch of practice, and, with the one exception just mentioned, accord it our unqualified praise.

ART. III.—*The Successful Treatment of Scarlet Fever; also Observations on the Pathology and Treatment of Crowing Inspiration in Infants.* By P. HOOD, Surgeon. 8vo., pp. 200. London: Churchill. 1857.

THIS little work consists of two distinct dissertations, embracing chiefly certain matters of fact which have fallen within the observation and experience of the author. The confident title of the first, and by far the longer of the two—"'The *Successful* Treatment of Scarlet Fever"—is well calculated to arrest the attention of every practical physician, for none of the diseases of childhood exhibit a greater mortality than this very exantheme, and none have given rise to a greater variety of opinion, not only as to its true nature, but also as to the best method of treating it. Moreover, either as a sporadic or epidemic disease, its geographical distribution is quite extensive. In his preface our author endeavors to anticipate any objections that might be urged against the propriety of such a title, by saying that it "only expresses what he has experienced to be true; and that the still longer experience of a friend—whose treatment of the disease is similar to his own, and based on the same principles—confirms what he has stated." Turning to page 6, we learn that during twenty-five years of active practice Mr. Hood has lost but two patients from scarlatina. One of the two cases—that of a boy seven years old—was moribund when Mr. Hood first saw it. The other was a girl four years old, in whom the fever and constitutional derangement being more than usually severe, he was prompted to adopt an antiphlogistic plan of treatment with diaphoretic, saline medicines, instead of his usual method.

He assures us that it was some years before he was able to reduce his mode of treatment to a state which was satisfactory to himself; that in the first fifteen years of his practice he frequently observed patients who, after passing through the primary disease favorably, were often prostrated and brought into extreme danger by some one or other of the various complications so commonly observed to follow scarlet fever,—such as pulmonary œdema, dropsy, anasarca, etc., and finally, that within the last ten years of his career as a practitioner he had learned to treat the disease so as to be able to prevent any of these complications from occurring. He informs us furthermore, that his friend Mr. Fuller, of Piccadilly, whose method of treating scarlatina closely resembles his own, has not lost a scarlet fever patient during a practice extending over thirty years. A statement similar to this may be found in Dr. Morris's work on scarlatina. A highly respectable physician informed Dr. Morris, in 1831, that he had never seen a fatal case of this disease, although he was extensively engaged in practice. We were present at a discussion on scarlet fever which took place at one of the meetings of the Philadelphia County Medical Society. One of the members, in the course of his remarks, said that he had attended many cases of scarlatina—more than 150, we believe—had treated them in the most simple manner, and had not lost one. This announcement called to his feet another member, who appeared scarcely able to find language sufficiently forcible to express his combined astonishment and incredulity. Upon further inquiry it appeared that these cases were all of a very light form—cases in fact of scarlatina simplex, which Watson thinks "is scarcely a disease," and which Sydenham long ago regarded as "fatal only through the officiousness of the doctor." In general, we see no positive necessity of calling the truthfulness of such statements into account. It is well known that in some epidemics the disease in question exhibits such a light and simple form as to require little or no treatment, almost every case recovering spontaneously. In other epidemics again, the fever assumes such a malignant character that no treatment, however judicious, or however timeously instituted, has the least control over the malady; and the mortality is frightful. There are epidemic cycles of the disease, requiring very long periods of time to complete their course, and exhibiting, from time to time, many minor and local changes in type. For these reasons it is very difficult to determine satisfactorily the value of any plan of treatment. In other words, it is not easy to satisfy ourselves whether the success which follows a certain kind of treatment is due to that treatment, or is simply at once the result and evidence of a strong tendency to health, inherent in the peculiar type subjected to such treatment. Before we can ascertain whether there has been any progress in the treatment of scarlet fever, we must first know whether the type of this disease has changed or not. We are inclined to think that such an inquiry would neither be so difficult nor so fruitless as at first sight it might seem. The differential diagnosis is so simple, and has been so well known since the publication of Withering's Essay, in 1779, that there can be little doubt as to the true character of the various scarlatinal epidemics which have occurred in different localities during the last eighty years. These epidemics were, in all probability, identical with the particular disease now known as scarlet fever. But their intensity or malignancy may have varied. It is obvious, therefore, that the intensity of an epidemic must be known before we can pronounce authoritatively upon the absolute merits of any special plan of treatment which may have been instituted during that epidemic. From a statement already made it will be seen that our author sets forth only the very general result of his twenty-five years of practice. He gives us no illustrative, individual facts, and we are left in total ignorance of the number of cases treated, and of the hygienic and social condition of his patients. We are not informed as to how many epidemics Mr. Hood witnessed in twenty-five years, nor how these epidemics differed from each other. These points, so important in their relations to the treatment, have been strangely overlooked.

Let us examine now the particular plan of treatment which in the hands of Mr. Hood has proved so eminently successful in scarlet fever, and which, we may say in passing, contrasts so strongly with that briefly set forth on page 1019 of the second volume of this journal. Before doing so, however, it may be well to premise that our author regards a peculiar blood-poisoning as the cause of the disease under consideration, and manifests a strong inclination to ascribe all the dangerous symptoms and complications to the accumulation of vitiated bile in the system.

The remedies which he employs are emetics, purgatives, and tonics. These are given, moreover, in the order in which they are here stated. When called to a case of scarlet fever, yet in its incipiency, he administers an emetic consisting of powdered ipecacuanha and sulphate of zinc. For a child six years old, he recommends the following formula: ℞.—Pulv. Ipecac. Rad., Zinci Sulphat. āā gr. x; Syrup, fʒj, and water, f℥j. This is to be followed by as much warm water as the child can drink.

> "It will be observed, that however difficult the power of swallowing may be, however extensive the internal and external swelling, whatever amount of suffusion of the eyes, or injection of the face, all these symptoms will be diminished after vomiting is produced: the child breathes better, swallows with less difficulty and a state of tranquillity succeeds to one of restlessness. The skin immediately becomes moister; the kidneys act freely, and the bowels are generally relieved. The child will frequently, on the subsidence of the emetic action, complain of being hungry, and ask for something to eat; but this desire should

on no account be gratified, unless with a small quantity of the simplest article of food, such as bread, or biscuit. The more severe the form of the disease, the greater will be the relief afforded by this remedy, which is as applicable to malignant scarlet fever as to the milder varieties. No fear need be entertained of the continuance of vomiting, from the use of this form of emetic: the same, however, cannot be said of another which is a favorite with many, namely, tartar emetic. The action of this is much more uncertain, more violent, and more depressing in its after effects; therefore, I never use it."

If sudden swelling of the throat and difficulty of breathing come on at the close of the disease, especially during the periods of desquamation, recourse is again to be had to emetics as the best means of affording immediate relief. According to Mr. Hood this relief is not so great, however, as that noticed at the onset of the disease. With regard to the effects produced by emetics, when given under these circumstances, he thus speaks:—

"One of the most important effects produced by the exhibition of an emetic is that it thoroughly empties the gall-bladder of any acrid or redundant bile that may be in it, and at the same time clears the stomach of all such offensive matter as may either have entered it or have been secreted by it. Its effects upon the bowels are highly beneficial, owing to the increased quantity of bile which it causes to flow into them, and which operates on them as a stimulant. Its effect upon the kidneys in inducing a more copious secretion of urine is also most salutary in relieving the body through this channel; and the power which it exercises in relaxing the skin, causing a greater amount of perspiration to exude through its pores, is equally advantageous."

He employs emetics without hesitation in all convulsive cases also, unless there be positive evidence of a sanguineous congestion of the brain of an apoplectic character. The convulsions and coma which sometimes usher in an attack of the scarlatina "depend," according to our author, "entirely upon the presence of bile in the stomach; for when it has been discharged no repetition of these symptoms occurs, and no other kind of treatment that can be employed will act so speedily and satisfactorily in restoring the patient to perfect consciousness as an emetic."

In convulsive and comatose cases—

"The vitality of the brain has been so weakened by the presence of the scarlatinal poison in the blood which has been circulating through it, that after some indefinite period, depending on the constitution of the patient, and other circumstances, it becomes incapable of resisting any longer the morbid impression produced upon it by this vitiated secretion of bile, which has entered the stomach, and through the nerves of this latter organ, in communication with the brain, has occasioned the temporary suspension of its functions. If the mouth be opened and the tongue examined, it will be found loaded with a dark-brown fur, and the saliva will be viscid and stringy. The impression conveyed on witnessing a patient in this state, is, that unless he be roused, or stimulated, death must soon ensue, for he seems, and he really is, on the verge of it already. Many are the remedies which I have known resorted to under such circumstances—brandy, ammonia, mustard poultices, blisters, bleeding, etc., but all generally without avail; unless the first-named, brandy, has acted as an emetic, which it sometimes will do, and then the object is attained which I contend for as being the only rational mode of affording relief, namely, vomiting. The administration of an emetic, under such circumstances, is *the* remedy; for until the stomach be emptied of the vitiated secretions contained in it, the brain will not return to a natural state, but every hour will increase the danger of effusion in that organ. If effusion has not taken place, the action of vomiting will speedily restore the patient to consciousness; but if effusion has occurred, owing to the length of time the patient has been permitted to remain comatose, or insensible, little more can be done to give him a chance of life. Mustard poultices, followed by blisters, and those remedies which are usually employed—but so frequently without success when effusion exists in the brain—may then be resorted to.

"If the emetic be long in acting, as it mostly is, in consequence of the diminished nervous energy of the stomach, a teaspoonful of pure brandy may be poured from time to time down the throat until this action is excited, and the fauces and back part of the throat may be tickled with a feather."

Our author also recommends the administration of emetics in cases approximating in character to the worst forms of typhoid fever, contending that as long as any bile or morbid secretions are present in the stomach, neither stimulants nor tonics will be of any avail, and the patient will derive no advantage from either, as their effects will be to increase the amount of oppression already existing in the system.

In the simple forms of scarlatina, when the action of the emetic has subsided, and in convulsive and comatose cases when sensibility has been restored, and the heart and pulse have regained their wonted vigor, and the skin has become warm, a brisk purgative is next to be administered. The particular purgative which Mr. Hood is in the habit of using, is "scammony and calomel." We suppose he alludes to the Pulv. Scammonii cum Calomelane—a preparation commonly in use among British practitioners, and consisting of five grains of scammony, two and a half grains of calomel, and two and a half grains of sugar, in every ten grains of the powder. Of this powder he gives six grains to a child five years old. This medicine he administers every night, not, however, in the same quantity, but in doses of three or four grains. When it has operated more than twice during the day, he omits it for a night. The use of this powder he continues until the fever has quite subsided, the tongue become perfectly clean, and desquamation has been thoroughly accomplished. To aid this latter process the warm-bath is to be employed every second night for a week or ten days, great care being taken that the child is not chilled on coming out of the bath. If the tongue becomes clean, and remains so after the operation of the emetic and the first dose of the aperient medicine, the powder of scammony and calomel is to be replaced by some of the simplest laxative medicines, such as rhubarb, castor oil, etc.

"I have never seen any ill effects arise from the administration of purgatives in scarlet fever, when given in the form and manner which I have described. I entertain the strongest conviction that if there be one form of medicine more than another which is entitled to preference, it is of this class. We are enabled by the use of aperients to do for nature what she is unable to perform for herself—that is, to discharge from the body those excrementitious matters, the retention of which is the grand cause of disordered action throughout the system. Aperients perform to a certain extent the work of the kidneys and skin, and by their means we can stimulate the bowels to throw off effete matters; but our power is limited, by causes previously mentioned, to make either the kidneys secrete sufficient urine to relieve the blood, or the skin to perform its proper function to answer the same object. The effect of aperients is to relieve from oppression all the vital organs; and, by a steady and persevering use of them, we need never be apprehensive of a critical diarrhœa, or a copious perspiration: all violent efforts of nature are spared the patient, and the progress to convalescence is rendered safe and easy.

"I regard, therefore, the judicious administration of purgatives as one of the most important and essential aids toward the successful treatment of scarlet fever. No complications of any kind are likely to occur if they be properly used, and given with discretion, according to the strength and constitution of the patient. The term "purgative" may, perhaps, have the effect of misleading some persons as to the particular effect to be derived from those medicines in the cases under consideration: but it is not a purging that is desirable; a moderately loose state of the bowels is all that is required by giving aperient medicine in scarlet fever, so as to insure a free discharge from the alimentary canal of all matters prejudicial to the body."

Having thus freely puked and purged his patient, our author next resorts to the sulphate of quinine in conjunction with dilute sulphuric acid and Huxham's tincture. To a child of six years he gives a grain and a half of the antiperiodic, with from eight to ten minims of the acid, and from half a drachm to one drachm of the tincture in one ounce of water sweetened with a drachm of orange-peel. To the use of quinine our author attaches great importance, as will be seen from the following quotations:—

"As I regard quinine to be the sheet-anchor of successful practice in scarlet fever, I am relieved of all anxiety as to the result of the disease, when I have once fairly established the regularity of its administration. * * *

"When proper attention is paid to the evacuation of the bowels, and the system by such means is relieved from all poisonous excrementitious matters, quinine, in combination with the dilute sulphuric acid, will then be found to produce its antiseptic and febrifuge effects in the most satisfactory manner. The accelerated action of the heart will abate, the skin will become cooler, and the nervous irritability—so strikingly displayed as the result of some poisonous influence pervading the system—will be tranquilized. The rash will soon fade—it seldom or ever lasts longer than three days—and the swelling of the tonsils will diminish, and gradually subside.

"No superficial ulceration will occur in these organs; the soft parts covered by mucous membrane within the mouth and throat will be observed to assume a healthier hue, and the swelling of the face and eyelids will soon subside. Conviction is thus forced on the mind that quinine is the antidote to the specific poison of scarlet fever, provided it be so administered as to enable it to exercise its most valuable properties in the way sought for. The curative efficacy, however, of quinine, like that of every other remedy applied through the stomach, depends upon the due absorption of it into the blood by the process of digestion: if it digests well, it soon enters the blood, rapidly puts a stop to its further deterioration, and thereby communicates the power—indirectly in some cases, positively in others—to each vital organ to perform its special function properly, and with benefit to the general system. This, however, it will not do unless the system, by the use of purgatives, as has been previously urged, is kept free from effete matters, which, otherwise, will most prejudicially interfere with its action. When this most important preliminary object has not been attained, quinine, instead of allaying the rapid action of the heart, accelerates it, at the same time rendering the skin hotter and the rash more vivid in color, increasing the swelling of the face and eyelids, and injuriously affecting the internal mucous membranes. The eyes acquire additional brilliancy, the patient complains of frontal headache, and his restlessness becomes painful to witness. If these symptoms are allowed to continue, delirium of an active kind will supervene, and one or other of the vital organs of the body will soon display some decided evidence of the exercise of its peculiar or appropriate function being interrupted."

Mr. Hood informs us that he has found quinine very beneficial in all those affections of the throat in which the glandular structures and mucous membranes are implicated, as in œdematous laryngitis and tracheitis, tonsillitis, cynanche parotidea and cyanche maligna. He advocates its use in erysipelas and diphtherite also.

"My experience of the treatment of erysipelas, in some of its worst forms, is exactly that which I have found most successful in the treatment of scarlet fever, in all its varieties: the same remedies, but usually in larger doses, as far as quinine is concerned, with the addition of wine and other remedies of a sustaining kind, bring this disease to a satisfactory termination."

Mr. Hood employs wine more frequently in cases of scarlet fever occurring among adults, than in those of young children. He prefers port wine, and gives it in quantities ranging from half a bottle to a bottle per day. Sound old wine is the best on account of the readiness with which it digests. New port wine is more difficult of digestion, and from the greater quantity of alcohol it contains, it is more stimulating and less tonic than old wine. Where thirst is excessive, and there is much irritability of stomach old hock is to be preferred to port wine.

"Whenever the use of wine is indicated by the state of the body, quinine is equally, if not more so. In the malignant sore-throat, with or without a rash, the prompt and decided administration of these two remedies may be said to constitute the basis of successful treatment.

"When the tonsils and soft parts at the back of the throat are of a mulberry color, sometimes approaching to a dark-grayish blue, with ash-colored sloughs, the danger from speedy exhaustion is imminent. I have, however, hitherto always found this form of disease perfectly under control by the free exhibition of wine and quinine.

"Should the medical attendant become irresolute, in consequence of the patient showing symptoms of delirium, and hesitate in having recourse to the aid of wine and quinine, lest they should promote a state of congestion in the brain, the peril of the patient will be increased.

"As this form of delirium is the result of an impure highly carbonized blood feebly circulating through the brain, the grand object ought to be the promotion of a more vigorous circulation, by stimulating the action of the heart; to establish a freer respiration, to enable the whole of the lungs to expand and receive air, so that the blood may be as speedily as possible divested of its poisonous element, by the natural action of breathing."

The extreme restlessness and insomnia which sometimes characterize scarlet fever, are to be subdued with opium. Mr. Hood thinks it unsafe to give this drug, if the bowels have not been properly emptied, or if the tongue be loaded with a yellow fur, indicative of the presence of bile in the stomach. He asserts that when given under these circumstances, it will still further complicate existing difficulties, and render the brain susceptible of the injurious effects of the sedative. "The proper time for prescribing opium is after the bowels have been freely emptied, and the tongue has become clean; and if that organ should have a preternatural red color, and seem as if it were glazed, and the patient be sleepless and restless, opium must be given, or low fever may ensue."

When the tonsils are ulcerated Mr. Hood touches them with the solid nitrate of silver. To relieve the dryness of the throat and difficulty of swallowing he uses a gargle made by adding the juice of one large lemon, and a tablespoonful of honey to a pint of *thick* barley-water, or rather barley-*gruel*. He is opposed to the abstraction of blood from the throat by leeches, to reduce the excessive swelling; but prefers, under these circumstances, the application of heat, by means of a hot flaxseed poultice put into a stocking, and placed as hot as can be borne around the throat.

The fourth and last chapter of this treatise is devoted to the consideration of the pathology and treatment of the dropsy which follows scarlet fever. The medicines which Mr. Hood has found most efficacious in subduing the acute form of this distressing and dangerous sequela are the bichloride of mercury, tincture of digitalis, and sweet spirits of nitre. To a child eight or ten years old he recommends the following draught, to be given every six hours, until the dropsical swelling abates: ℞.—Liq. hydrarg. bichloridi, ♏xv; Tinct. digitalis, ♏ij ad iij; Spirit. æther. nit. fʒss; Aquæ, f℥j. A powder composed of a grain to a grain and a half of calomel, with the same quantity of James's powder and sugar, is to be given every night, or every other night, as the case may require, followed in the morning by an effervescing, diuretic aperient draught, containing a drachm to a drachm and a half of tartrate of potash, half a drachm of bicarbonate of potash, half a drachm to a drachm of spirits of nutmeg; a drachm of syrup of ginger; and water an ounce and a half; to be taken with a tablespoonful of lemon-juice. In the mean time "the strength of the patient must be supported by a diet composed of milk and rice, and food of a farinaceous description; and where asses' milk can be obtained, it is of great service in sustaining the powers of the body when the circulation is rapid and the debility great. If there be much thirst, it may be quenched by raspberry vinegar and water, or the so-called 'imperial' drink may be used, which is a composition of cream of tartar, lemon-juice, sugar, and water." In the mild form of scarlatinal dropsy a "dose or two of calomel may be requisite at the commencement of the treatment; but the disease will generally be observed to yield readily to the administration of alteratives and chalybeates."

> "I have seen," says Mr. Hood, "many cases in which the patients have rapidly got well by the use of medicine similar to the following: For children from six to eight years of age, hydrag. cum cretâ, a grain and a half; powdered squills half a grain; powdered jalap, four to five grains: to be taken every night. A mixture composed of tinct. ferri ammon., forty minims; syrup. aurantii, ʒiij; inf. cusparii, ℥iij; the half twice a day. In dropsies of this kind the nourishment must be liquid: it may consist of beef-tea, as well as milk, with the addition of rice and farinacea. A small quantity of wine and water may also be occasionally given with advantage."

In the treatise on Crowing Inspiration, our author records some original and valuable observations upon enlargement of the liver as a cause of this interesting and obscure disease. We regret that our limits, already exhausted, will prevent us from placing these observations before our readers.

ART. IV.—*A Treatise on Rheumatic Gout, or Chronic Rheumatic Arthritis of all the Joints.* By ROBERT ADAMS, M.D., A.M., M.R.I.A., ex-President of the College of Surgeons in Ireland, and of the Pathological Society; Surgeon to the Richmond Hospital, Dublin. Illustrated by Wood-cuts, and an Atlas of Plates. London: Churchill. 1857. 8vo., pp. 352; 11 Plates.

WE were at first misled by the title of this work, and fancied that it related principally to the internal pathology of gout and rheumatism, and the mixture or confusion of those affections commonly alleged to be designated by the term rheumatic gout. We were not prepared to find it leading us through investigations most generally met with as the objects of surgery.

Undoubtedly, an elaborate examination of the organic changes exhibited, is matter quite of the cast which has, during many years, possessed so deep an interest for internal pathologists; and the chirurgical aspect of the book is the simple consequence of the situation of the lesions. The work is based upon a profound and elaborate study of the visible changes in the joints. Yet we might have expected something more. Not a word is said, at least beyond mere definitions of words, of the causes, nature, or treatment of either gout or rheumatism in its early or middle stage. There is a total absence of microscopical considerations; and nearly the same may be said in regard to chemical views; and no mention whatever is made of the concomitant or consequent affections of the endocardium, or valves of the heart. Besides all this, our author's own cases are entirely confined to rheumatic subjects; and the introduction of the word gout into the title-page at all, is only justified by his abstracts of the observations of Haygarth and Sir Benjamin Brodie.

We are thus tempted to doubt the propriety of the title. Arthritis is, no doubt, etymologically correct in the case, and certainly includes gout when used in the works of Hippocrates; but is it just to assume the present meaning of the word to be such as Dr. Adams has implied? We believe the present usage of the profession to be decidedly in favor of confining the employment of the term gout, and with it, of its translation, arthritis, to the disease which begins with visceral disorder, and produces, in an evident manner, an excess of uric acid in the secretions, and in the nodose deposits formed by the morbid process in the joints. Not to speak of the less recent modern authorities, such is certainly to be inferred from an inspection of the half dozen later works to which we have referred with this object, including an earlier edition of Dr. Wood's Practice, and the volumes of Drs. S. H. Dickson, Watson, and Williams, and among the Germans, those of Canstatt. It is true that Dr. Wood, in his recent edition, opens this question again, and speaks of it as undecided, following in his classification the usage of Dr. Adams; whose work, however, he states he has not had an opportunity of examining. The disease described by Dr. Adams appears to occur almost exclusively among the poor, all of them being persons exposed to cold, namely, the Irish laborers. Of the propriety of the term rheumatic inflammation of the small joints, there can perhaps be no real doubt. To that of arthritis, used as a translation of gout, in which sense it will certainly be taken by the great mass, and is taken by Dr. Wood in the passage referred to, we cannot withdraw our objection that it keeps up confusion and doubt in a case where all the clearness and positiveness that are attainable are certainly earnestly demanded by the interests of mankind. It is not uncommon to hear words, when subjects of discussion, spoken of as trifles. They are not always trifles; they relate to things, and are sometimes important things. What objection lies to the expression so popular with the French schools, articular rheumatism? Were we called upon, we should have defined the subject of the present valuable work as the Anatomical Consequences of Chronic Inflammation of the Joints from Internal Causes, such as Rheumatism, and, if the author pleases, Gout.

The first chapter of Dr. Adams's work is a notice of the memoirs on this affection, published from the time of Dr. Haygarth down.

The *causes* of the disease are generally constitutional; exposure to cold, humidity, and night air, after the operation of depressing agents on the body; cold after the body has been much heated by hard and excessive exertion; and being kept standing for a long time in cold water. Of local causes, Dr. Adams cites from Dupuytren the occurrence of a similar affection in the wrist-joint from habitual excessive straining of that joint, as in printers' pressmen; and from Haygarth, a case which originated in a sprain. In his own experience, he has seen instances which occurred in the hip-joint, from excessive exertion of the part; and in the shoulder and hip he has witnessed the same phenomena from severe concussions. The writer of this believes that he can add an instance occurring in the ultimate joints of the fingers from continued exposure to severe cold. There had been one hereditary antecedent in the case.

Dr. Haygarth found the disease principally prevalent among persons who lived luxuriously, and used but little exercise. It appeared to him to be more connected with the use of an excess of animal food, than with that of fermented liquors. Dr. Haygarth found frequent gouty deposits; and the outbreak of the disease was frequently preceded by those gastric disorders which are usually considered the forerunners of gout in its regular form. The experience of Dr. Adams is directly the reverse in these particulars.

Symptoms.—The disease is essentially chronic, never being accompanied by much heat in the part. The swelling at first is large, rounded, and not hard, being in general partly composed of an augmented synovial secretion. The joint is stiffened, and limited in its motion, with little or no pain. By long continuance of the disease, the stiffness increases, the rounded swelling diminishes, the fluctuation of synovia disappears, and the nodosity becomes visible. Spasms of the corresponding muscular fibres frequently, or even generally, accompany the process: this again being in opposition to the experience of Sir B. Brodie.

The nodosity, which so much fixed the attention of Dr. Haygarth, is chiefly owing to an irregular sprouting of bone; and there exists a particular tendency of the edges of the joints to be extended by bony prolongations, often felt externally, and contributing to limit the motion of the part. There is frequent proneness to form loose pieces of solid consistence within the joint; and Dr. Adams has met with these very frequently, and in remarkable numbers, within the bursa of the olecranon. Numerous detached bursæ, entirely separate from the cavity of the joint, have been found about the joint affected; we understand, in the elbow, (p. 15;) and these, by desiccation, may become nodose in their characters. A crackling noise is very generally heard in rubbing the joint; and this occurs in every part of the body. The articulation finally changes its shape, and becomes much more bulky and irregular, independently of the nodosities. Dr. Adams has never met with the deposits of gouty matter. Of anchylosis, he has seen but one example, which was in the wrist. One would infer from his language that he inclined to think that Sir Benjamin Brodie, in mentioning the occurrence of this lesion, must have intended to use the word anchylosis in the sense which includes false anchylosis. Purulent deposits are rare, but Dr. Adams has met with them, in several instances, within the cavity of the affected joint.

Prognosis.—This, as far as relates to the prospect of a cure, appears, both by the observations of our author and of Dr. Haygarth, to be always unfavorable. The changes go on gradually increasing, with no intermission and little remission, during the remainder of life. If the disease be local, a well-managed treatment and favorable circumstances may enable the party to select some new employment suited to the condition of his members. But woe unto those in whom it appears as a general and constitutional affection, assailing many of the joints dispersed throughout the whole body. Their rest becomes imperfect, they become excessively sensitive to atmospheric changes, and little can be done for them in the way of remedial treatment. These ultimately form those unhappy cripples, with many limbs distorted, whom we meet as the permanent inhabitants of our almshouses. They are carried off in considerable proportion during the winter season, by dysentery, diarrhœa, and acute inflammations of the viscera, and sometimes by phthisis.

It would not appear, from the observations either of Dr. Adams or of Dr. Haygarth, that this affection, under favorable circumstances, shortens life, whether among the luxurious, who commit excess at the dinner-table, and avoid exercise, or among the poor, who suffer by cold. Dr. Adams believes that even the unhappy objects last described, if provided with the comforts and conveniences of life, clothed warmly, and enabled, though they may not be capable of walking, to take exercise of some description in the open air, appear to live as long as others of the same age. Dr. Haygarth knew no instance in which the nodosities and their attendant affections seemed to him to shorten life. The first individual he attended for this complaint lived to ninety-three years.

It will be observed that there is no mention among all this "articular rheumatism," of subsequent disease of the valves of the heart, with suffocation and death; nor is there, in fact, as already observed, any such throughout the whole volume.

Diagnosis.—On this important and difficult point Dr. Adams has furnished us with no separate recapitulation. It is only to be gathered, we apprehend, from the general description of the symptoms; and of these we have given the best abstract in our power. In the further special details of different joints, as they are affected by the disease, new characters certainly arise; but when we recollect his frequent amalgamations of his own cases with those of Dr. Haygarth, which were gouty, it is difficult perhaps to define the distinction between rheumatic and common gout in them. Other diagnostic rules will suggest themselves between the deformities of joints from this cause, and the fractures, dislocations, and other lesions which occur in surgery. On these Dr. Adams does not specially enlarge; leaving the diagnosis, as before, to be inferred from his detailed and very accurate descriptions, and his beautiful plates.

Anatomical Changes.—This very curious portion of our author's inquiries is also the richest. If the patient is cut off by some other agency, during the early stage of this affection, Dr. Adams predicts that we shall meet, besides the presence of an accumulation of synovia, with thickening of the ligaments and synovial membrane, and internal redness of the latter, with a great increase in size and color of the normal vascular tufts. We have a right to believe that Dr. Adams has seen dissections at this stage; but he does not assert it, or give any cases or plates to exemplify it.

With time, the fluid in the synovial membrane is reduced to about its ordinary amount. The capsule is then found thickened: in one instance this was the case to the extent of a quarter of an inch. It approached in appearance to the intervertebral substance. In some cases pieces of bone are found in its texture. There takes place, also, a removal of normal structures. The round ligament of the hip, and the intra-capsular part of the long tendon of the biceps, in the shoulder, in prolonged and severe cases, are generally removed; while the attached muscular fibres of the last-named flexor are not rendered useless, as the mutilated end of the tendon forms a firm adhesion to the edges of the groove between the tubercles of the humerus in which the cord naturally slides. The cartilages which incrust the ends of the bones are very frequently removed in part or altogether. The interarticular cartilages of the joint between the lower jaw and os temporis, of that between the sternum and the clavicle, and of the knee, are, in tedious and severe cases, generally removed entirely. In one subject, the semilunar cartilages were hypertrophied; and in another, partly ossified. The fibro-cartilaginous brims of the glenoid cavity of the shoulder and the cotyloid cavity of the hip, are liable to be removed by absorption. The lateral ligaments of ginglymoid joints are elongated.

A not unfrequent consequence of all this is looseness, and a capability of abnormous motion, extending to subluxation, and sometimes to luxation. Small movable masses, occasionally, as we have seen, discovered during life, are very frequently formed within the synovial membrane; occasionally in large numbers. One elbow-joint, made the subject of a plate, exhibited forty-five! These masses are cartilaginous, occasionally containing small pieces of bone, or incrusted with bone. They are generally attached by long, slender filaments, and occasionally connected together by a similar medium. In the remarkable instance recently mentioned, they were in groups or clusters. We do not observe that any were found absolutely detached. In one shoulder a large, abnormous cartilage in the form of a crescent embraced the anatomical neck of the humerus, and was attached with some firmness at its two extremities, thus strengthening the joint In some cases, abnormous pieces of bone were found deepening the cavities of arthrodial joints. Bright, vascular fimbriæ were, in some cases, very numerous.

The original bones were sometimes increased in size throughout their whole extent. Where thickness of bones was sawed through, the section exhibited unusual redness; but the most remarkable change in these organs was the conversion of that part of their articular surfaces from which the cartilage had been removed, into an ivory-like substance, with transverse ridges and hollows, following the direction of the most frequent motion of the joint, and fitting into a corresponding arrangement in the opposite bone. Where a ball-and-socket joint was thus affected, there was, consequently, a tendency to convert it into a ginglymus. The spherical or cylindrical surfaces, as of the upper extremity of the radius, at the ends of bones, were rendered oval; or the spherical surface sometimes replaced by a portion of a much larger sphere, diminishing the convexity.

Treatment.—Dr. Adams begins the subject with the inquiry whether the disease be inflammatory, and decides that it is so. With the modesty which characterizes the work throughout, he depends more upon the opinions of previous writers on the disease than on his own; and yet we could wish that he had analyzed and arranged his materials more fully, and given us some criticism on them. An anxious mind might experience difficulty in deciding what treatment he really recommends; and a prejudiced one might not be adequately influenced by opinions hinted at or expressed with so much diffidence. Our readers will see that the discussion of the inflammatory nature of the complaint is rather between two modes of viewing subjects of the class, two philosophies of pathology, than between the experience of different men on a practical problem. There is no doubt of the existence of many of the phenomena of inflammation in the cases, both before and after death.

Notwithstanding the unfavorable prognosis, Dr. Haygarth derived benefit from the warm-bath, even in very bad cases, as also from continued affusions of warm water, and from the repeated application of leeches. Sir Benjamin Brodie believes that much may be done at the very commencement of the disease. He recommends a very careful system of diet, including the very moderate use of animal food, a prohibition of fruits, acids, raw vegetables, and sugar, and the use of little or no fermented or spirituous liquor. The patient should take exercise daily so as to induce perspiration; and if this cannot be readily accomplished, he may, from time to time, take alterative doses of acetous extract of colchicum, combined with a small quantity of the mercurial pill, and use occasional purgatives. Moderate doses of potash or magnesia may be given, three or four hours after each of the principal meals, so as to neutralize any superabundant acid in the stomach. Soda should be carefully avoided, as tending to unite with uric acid, and form gouty concretions. Where the patient is depressed, as by the use of colchicum, a mixture of rhubarb, magnesia, and ginger may be given every night, with an active aperient at stated intervals, and very great benefit will often be derived from long perseverance in this procedure. If there be more than usual pain, leeches may be applied; and sometimes a light bandage, to limit motion, or even a light splint or two. Little permanent benefit, according to Sir B. Brodie, is to be expected, in general, from any local remedies; and he recommends them as palliatives. When the disease is confirmed, he reserves mercury and colchicum for special occasions. He believes that iodide of potassium is not wholly undeserving of reputation in the case; (grains ij...iij, twice a day, continued for several weeks.) One patient was benefited by the use of cod-liver oil internally and externally. These opinions of our old teacher, so well known and familiar to us as "Mr. Brodie," are well suited to the character of a great surgeon. Without presuming to say that no future discoveries or more extended experience will cause any of his directions or judgments to be superseded, they exhibit the idea of a man, profound in his elevated profession, and equally conscientious in the discharge of it; careful and laborious in the relief of the sick and injured, and scrupulous in making known the results of his observations, to enable others to go and do likewise. The value of these, future ages will be able to estimate. One who well knew Philip Syng Physick feels best prepared to do honor to Benjamin Brodie; who, after all his sovereign and countrymen have done to honor and distinguish him, has a still higher claim to grateful and praiseworthy remembrance than can be satisfied by queens and nations.

With this reserve of untarnished respect, we are tempted, by the very copiousness of Sir Benjamin's directions, to a comment or two, which we shall try to make in the love of truth. They remind us, first, of the gouty character of his cases; and of the circumstance that the state of things described by Dr. Adams is the consequence of two different sets of causes, distinctly implying two very different states of constitutional predisposition; all the difference, in iteration, between gout and rheumatism. That unfortunate word, diagnosis! Next, we hope to be excused for reminding our readers of the habit, prevailing extensively among the countrymen of the author whose opinions have been just recited, of considering the daily use of beer or wine, if not spirits, as a matter of course. Again, we presume that a more modern chemistry will hardly indicate much utility in avoiding soda, when there are always present such large supplies of this substance in the blood. (See *Lehmann*, Am. ed. i., pp. 546 and 590.) Another reflection may be thought harsh, and possibly unbecoming. We allude to the practice of referring medical formulæ to hospital or locally popular names, instead of making them common to the world by the ordinary means of publication. This we suppose to be the result of haste, or of the indolence of fatigue; but, if we dare ask the question, does it not *encourage the encouragement* of nostrums? If it do not bring business to "our shop," it may help to bring students to "our hospital;" a resource which the established and world-wide reputations in question render very unnecessary. "Dr. Gregory's Powder," for rhubarb, magnesia, and ginger, "sold" under that name by somebody; and "The

Chelsea Pensioner's Electuary," for a compound of sulphur, guaiacum, "et cetera"!

Dr. Watson is next quoted, (Lectures, third edition, 1848.) He advises flannel, warm climates, warm bathing, particularly with salt water, warm douches, vapor baths, hot-air baths, friction and shampooing; also turpentine, some animal oils, as cod-liver oil, which he includes among stimulants, guaiacum, iodide of potassium, and Dover's powder.

Dr. Adams states his own advice, without exactly summing up. In the sub-inflammatory stage, which we should call the subacute, the usual "treatment for chronic arthritis should be had recourse to." We are tempted to ask why, if the disease is not gouty, but rheumatic? He can report favorably of the use of cups and leeches, and of that of the Chelsea remedy already spoken of.* Anodynes afford considerable relief; though why, unless for persons habituated to opium, we should mix the watery extract of that substance with p. ipec. comp., we do not exactly see. It appears, also, that Dr. Adams has hardly been particular enough in pointing out the stage at which a disease, originally accompanied with so little pain, begins to require strong opiates. It is easy to imagine the necessity of it with those who have many joints diseased. Benefit has been derived from ammoniated tincture of guaiacum. Discrimination is important with regard to exercise. In the subacute stage of the commencement, rest is absolutely necessary; but at later periods, when stiffness is more characteristic than pain, some walking every day is desirable. It will improve the general health, and increase the flexibility of joints, and extend their power of motion. Dr. Adams's experience coincides with that of Messrs. Teissier and Bonnet, that prolonged total rest of joints is highly injurious to their usefulness; and here much experience coincides with them and him. We have not taken the time to examine the statements of these writers, beyond a few sentences extracted in Dr. Adams's Atlas. Dr. Adams agrees with them in finding that this error of management is calculated to determine the effusion of a sero-sanguineous fluid into the synovial sacs, the formation of false membranes, and erosion and thin-

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* In the absence of the formula of Sir Benjamin's Hospital, we copy, from Jourdan, the anti-rheumatismal Electuary of Niemann's notes to the Pharmacopœia Batava; which we presume to be convenient and think neat:—

℞.—Sulphuris	partes	lx.
Gum-resin, guaiac. et		
Rhabarbari, āā	partes	vij.
Supertart. potass	"	xxx.
Nuc. myrist., fragrant. (Pereira.)	No.	j.
Mellis despumati	partes	ccclx.

M. ft. electuarium s. a.

ning of the cartilages. Of thermal waters, he apprehends that experience is insufficient to decide in point of comparative usefulness in this affection; and deems that such will probably be the case till the disease shall have become more generally understood, and distinguished from gout and rheumatism properly so called, and until subsequent experience shall have been collected and recorded. This remark revives our regret for the want of a more explicit diagnosis. Finally, he renews his caution to attack the disease in its early stage.

We have been thus minute with the earlier part of the volume from judging it the most important. The remaining and larger portion (300 pages and a number of wood-cuts and plates) is occupied with the details of the effects of this disease upon the various joints of the body, and with the history of cases. A few cases are likewise related in the Atlas.

In the hip-joint, Dr. Adams does not approximate the disease under discussion to the old-fashioned *morbus coxarius* of young persons, which he considers scrofulous. When the present reviewer saw a number of these cases, scrofula was, as it still is, a decidedly rare disease in Philadelphia. We here mean the glandular disease, excluding all the affections of the eyes, ears, skin, etc., somewhat hypothetically, and on authority, taken to be scrofulous. We have never seen very clearly the difference, either in symptoms or morbid appearances, between that affection and other chronic inflammations of joints; not denying, with an equivalent hypothesis, that there may sometimes have been a tubercle in the case, within one of the bones concerned.

A *morbus coxæ senilis* is identified with the present disease by Dr. Adams, and also with allusions of Benjamin Bell, and descriptions by Sandifort, of Leyden, in 1793, and by Professor Smith, of Dublin. It has been exhibited and lectured on for many years in the hospitals of the last-named city. Dr. Adams thinks that cases of this kind have been found in dissection, and taken for cures of fractures of the neck of the thigh-bone within the capsule. The well-known obscurity and difficulty of diagnosis in injuries in the vicinity of the hip-joint, certainly leave ample room for future discovery, and a strong moral motive for inquiry.

In the shoulder the amount of destruction seems proportionally much greater. The head of the bone is often enlarged to part of a much larger sphere, a cause which gave rise to difficulty in Lisfranc's mode of amputation; the fibro-cartilaginous edges of the socket are removed, and a very large and totally abnormous joint is formed. In some cases the joint subsides to a lower level. We have mentioned the destruction of the upper part of the long tendon of the biceps, which seems to be one of the earliest of the severer changes. The case of "partial luxation of the shoulder-joint forward and inward," described from a dissecting-room in Sir Astley

Cooper's work, is believed, by Dr. Adams, to be one of the affection under consideration; and Dr. Adams's figures go far to confirm this conviction. One hesitates much to accuse Sir Astley Cooper of an error in diagnosis; but the interests of science and humanity demand the truth, and Sir Astley was mortal.

Our limits compel us to abridge much that is highly interesting and useful, and we have chosen to do so principally in this part of the work. Under the article shoulder, are found analyses of a variety of published cases. The elbow is principally remarkable for multiplicity of loose cartilages and abnormous bursæ. In the knee, we have generally some pain in the inner condyle and in the tibia, with some heat and swelling of the joint, the patient walking for years. The knee inclines inward, and the foot is slightly everted; the fluctuating swellings of chronic synovitis are perceived, and occasionally accompanied by a swelling, about the size of a hen's egg, in the ham. The patella is liable to be thrown over the outer condyle, as in dislocation by violence. Roughness is felt, and a crepitating noise heard in flexing and extending the knee. The patella becomes broader than natural, and bony ridges are felt on both sides of the sulcus in which it slides. The knee is particularly subject to numbers of little cartilaginous bodies, like melon-seeds, attached by slender shreds, best described by Rokitansky; and to bony vegetations round the edges of the joint, growing from the femur. Various other changes, very curious and interesting, we are obliged to pass over. The distortions of the wrist and hand are very frightful and very various. These affections are more numerous here than in any other part of the body. The difference between local and constitutional cases is very marked here, the constitutional cases affecting both wrists at once. The most extraordinary distortions are produced, including dislocations. Details of the disease are given as it appears in the ankle, foot, articulation of the lower jaw, and sterno-clavicular, and acromio-clavicular articulations; and to illustrate those of the cervical vertebræ there are four cuts.

It is time now, however, to look toward a close. On summing up, there is no doubt of the justly high rank and great value of the work before us. It is a production in morbid anatomy, much called for, in a department inadequately explored, and the labor is rewarded by a large accession of knowledge. It is also the more valuable in the British schools, in which morbid anatomy has been by no means so much cultivated as in some others, or as its importance may demand. At the same time we candidly say that our author appears to us deficient in the art of bookmaking, not merely in the formal sense, but in one very real. He has brought together what it has cost the labor of so many observing and reflecting minds to separate; he has once more confounded gout and rheumatism together, and furnished a new pretence to those who find a shelter in obscurity and indefiniteness. As in the case of the common or the doubtful quantity of a Latin syllable, there is a real and important distinction between the two things; yet it is a great saving of trouble to confuse them, and a mind imperfectly informed can find comfort in the obscurity. It is well sheltered, too, against public opinion. The idea of such a mixture is an old one, and is now common among the people; hence, to a practitioner who is really not well enough informed on the subject, who is not ready at argument, or who is of a timid disposition, and fearful of discussion, lest it betray some weak point about him, it may be convenient to take shelter in a doubt which is taken for acknowledged among those with whom he practices. Unfortunately, however, this has an injurious influence on the profession. The argument that medicine is full of doubts, backed as it is by so many satirical poets, and by almost every petty pretender to the character of a philosopher, is always a favorite one with the quacks. "If your own science, as you claim it, is full of doubts and obscurities, what right have you to censure Thompsonians, Homœopathians and others for alleged errors of theory?" They then lay their nauseous claim to be rival "schools" in medicine, and advance the mendacity of alleged "successes."

The fact is that to draw the distinction between truth and error, and between uncertainty and reasonable human proof, is the first and highest duty of a teacher. In this venerated position we place both those who, like our author, extend the limits of useful science, and those whose labor it is to teach what is already known, and methodize it by systematic treatises or public lectures. We therefore regret that Dr. Wood, in a passage already quoted, leaves this point as doubtful, and seems to depend on future usage to settle whether the affection which results alike from the radically and widely different sources of gout and rheumatism, shall be treated as a mixture, or rather as an indefinite obscurity between them. It appears to the present writer that this professor's choice has led, or amounted to a fault; and that the reader had claims, not only to a statement of an apparently unsettled point, but to the decision of an eminent and celebrated teacher thereupon; not merely to the information that such a discrepancy remained in general usage, and appeared to have been revived by Dr. Adams, but to the judgment of his master which was the correct view.

Nor is even this all. It is not a mere looseness of expression in grouping together a set of severe phenomena, equally produced by two sets of causes, requiring totally different, and in some respects opposite, modes of prevention and cure. This is not the popular confusion. The impression among the people is, that gouty rheumatism is a mixture of the two things together, and that it pervades the whole body. This is the natural meaning of this very incorrect phrase, as well as of rheumatic gout; not common results from two causes, but a mixture of two results. Hence an excuse for all kinds of blindness and experimental management, a fear of any persevering treatment lest another half of the disease be neglected, increased hopelessness of the cure from the alleged complication in the malady, and a readiness, at any moment, to "try a little," never sufficiently to ascertain the truth, the resource of another physician or practitioner, of any imposture, of any obliging neighbor's prescription, of any common drug of worn-out reputation, or of any plant; all taken at random, without method, or any real hope of cure. Hence if a physician should be guilty of giving way to the continuance of the error we have above exposed, he is himself punished in the long run, and involves his unoffending friends.

Opposition to this cannot be blamed as selfish or interested, when it consists in an increased effort after certainty and accuracy, and after scrupulousness in distinguishing between that portion of medicine which has gratified the malice of French theatrical wits of another age, and of small philosophers, and men of the world in ours, styling their art an *ars conjectandi*, from that which is set forth and sustained by a conscientious, well-informed, and careful study, as matter of truth and real science.

ART. V.—*Catalogue of the Surgical and Pathological Museum of* VALENTINE MOTT, M.D., LL.D., Professor of Surgery in the University of the City of New York, etc., and of his son, ALEXANDER B. MOTT, M.D., etc. 8vo., pp. 78. New York, 1858.

As will be perceived from its title, this pamphlet comprises an enumeration of the many surgical preparations and specimens of morbid and normal anatomy contained in the collection of Dr. Mott, a name as familiar as household words to every medical man on both sides of the Atlantic, as having contributed more to the honor and advancement of the science of surgery in this country than any of its worthy sons. His operations upon the arteries alone would have been sufficient to have made him an enviable reputation, had he done nothing more; but when we add to this his valuable contributions to surgical literature, his untiring professional zeal even during his declining years, and his numerous and varied operations, we can but regard him as a most extraordinary man. As a general rule, the specimens are simply enumerated in the order in which they occur in the various compartments of the museum; to some, however, histories are attached, which render them valuable not only to the students of the University, for whom the work is especially designed, but to the practitioner who cannot be familiar with the cases, as they were, for the most part, published in medical periodicals many years ago. A point of interest to the surgical pathologist is that in all the cases of spontaneous gangrene here reported, it will be found from the histories of the cases that the main artery of the limb was obliterated either by ossific or fibrinous deposits. In speaking of a specimen of ulcerated carcinoma of the heart, Dr. Mott observes that he has never seen a case in which, after its removal, the disease did not recur; an opinion in favor of which the great mass of the profession can bear testimony. Young surgeons of the present day would do well to bear this point in mind before operating.

The museum abounds in specimens of cancer in its various types, and we are struck with the frequency with which the bones are affected. In this connection we may allude to one of Dr. Mott's most difficult operations, that of removal of the clavicle for osteo-sarcoma. In this case not less than forty ligatures were applied to bleeding vessels, among which was included the external jugular vein. The patient lost but comparatively little blood, and made a good recovery at the expiration of two months. The ligation of the external jugular is interesting when taken in connection with several operations here described, in which large venous trunks required tying, as the femoral and axillary veins, without any bad consequences. The greatest of all Dr. Mott's operations is that of ligation of the innominate artery, which he was the first to perform. Inasmuch as the case has been out of print for some time, and on account of its great interest, we do not deem it necessary to apologize for inserting it for the benefit of any of our readers who may not be familiar with its details :—

"*Ligature of the Innominata.*—The pioneer operation on the Arteria Innominata. It was performed on Michael Bateman, a seaman, twenty-seven years of age, in the New York Hospital, May 11, 1818. About a week previous to entering the hospital, while at work on shipboard, he slipped and fell on the shoulder of that side, and in two or three days it was so much swollen as to incapacitate him from duty.

"March 1st, he entered the hospital as a medical patient, for a catarrhal affection, which at that time attracted most attention. The shoulder, however, was blistered repeatedly, under which treatment the swelling somewhat subsided, leaving the tumor more distinct and circumscribed, and revealing an obscure pulsation. This was at first supposed to be communicated by the subclavian artery, as the tumor was hard and unyielding.

"May 3d, he felt 'something give way' in it, and the enlargement suddenly increased, fully one-third, with much pain in the shoulder and inability to raise the arm more than a few inches from the side. As the pulsation was now distinctly perceptible, though the firmness remained, he was transferred to the surgical side of the house.

"After due consultation with Drs. W. Post, Kissam, and Stevens, and with their concurrence, I resolved to attempt the ligature of the subclavian artery within the scalenus muscle. If the size of the aneurism, however, should be found to prevent this, as a dernier measure the brachio cephalic trunk itself was to be tied. Dr. Post made a full and candid explanation to him of the nature and probable termination of his disease and of the uncertain character of the operation, after which he requested to have it performed as furnishing him some chance of life.

"May 11th the tumor had become so irregular in form that it is difficult to give an idea of its size. It had elevated the clavicle, by its pressure, about an inch above the level of the opposite bone, and it further rose above the bone in the form of two lobes, fully another inch. A thread crossing it, obliquely, upward and inward, toward the back of the neck, from margin to margin, measured five and a quarter inches. A second thread, crossing the first at right angles, an inch above the clavicle, measured four inches—two and a half inches being on the sternal side and one and a half on the acromial. His pulse was sixty-nine and regular, with no difference at the two wrists.

"After placing him in the recumbent posture on the table, an incision about three inches long was made just above the clavicle and parallel to that bone, terminating over the trachea, at which point it was met by a second incision of about the same length, along the inner edge of the sterno-cleidomastoid; the two making a V, the angle of which was reflected from the platysma myoides, and this muscle divided. All the sternal portion of the mastoid muscle was then divided as well as the greater part of the caviclar portion, in order to turn it upward and outward. The latter portion proved to be morbidly adherent to the internal jugular vein, requiring the utmost delicacy in its detachment, and limiting the room for the subsequent steps of the operation. The sterno-hyoid and sterno-thyroid muscles were then divided and reflected in the opposite direction, over the trachea. The sheath of the jugular vessels was now opened near the sternum, and the nerve and vein drawn to the outside, while the artery was pressed toward the trachea. About half an inch of the subclavian artery was then brought into view, which appeared considerably enlarged and of an unhealthy color, so that my friends concurred with me in the impropriety of passing a ligature around it. In fact, the close proximity of the tumor was of itself sufficient reason for no ligature here, as healthy adhesive inflammation was not to be anticipated in the vicinity of so much disease.

"Proceeding downward toward the innominata, when about half an inch above it, while cautiously separating the artery with the smooth ivory handle of the scalpel, a small branch, about the size of a crow's quill, was lacerated, which filled the wound, perhaps six or eight times, but was stopped by pressure. The bifurcation exposed, the dissection was further prosecuted behind the sternum, and finally the brachio cephalic trunk isolated from the pleura. This was done with the handle of the knife, to prevent wounding that membrane. By means of a small blunt aneurism-needle the ligature was then passed from below upward, and a knot formed and gradually tightened by means of the two forefingers introduced into the wound.

"I acknowledge it was with feelings of intense anxiety, and with my eyes fixed on his countenance, that I ventured, for the first time in the annals of surgery, to intercept one-fourth of the whole blood so close to the heart. I drew the ligature gradually, determined to loosen it instantly if any alarming symptoms appeared. But there was no change of feature or agitation of body, and with the highest gratification I continued to draw the knot, until the circulation in this great trunk was completely arrested. This was shown by cessation of pulsation in the arteries of the right wrist and temple, as well as diminution by a third or more in the size of the tumor. Ten minutes after the operation the pulse was again beating regularly, sixty-nine in a minute. Only three small arteries were tied.

"There followed but little diminution of temperature in the right arm. The pulse in the evening being strong and full, and about seventy-five, he was bled xvi. oz. On the second day, in the afternoon, as it had again become tense, with other symptoms of febrile reaction, he was again bled viii. oz. and ordered light diet and salines. At the end of ten days it was about one hundred and ten, from which time it again diminished in frequency to a healthy standard. On the fourteenth day the large ligature which had been confined over the sternum with a strip of adhesive plaster, came away. From this time he continued to improve, and had become able to walk about the wards and the garden of the hospital, when, on the twenty-third day he was suddenly seized with an alarming hemorrhage from the wound, reducing him to syncope before it abated. All attempts to prevent recurrence of the bleeding, by stuffing the wound, proved ineffective, and he perished on the twenty-sixth day of exhaustion.

"On post-mortem examination the ulcer was found at the bottom twice the size of the wound in the neck. It communicated freely above with the subclavian and carotid arteries, and below by a small opening with the innominata. The latter artery was partially plugged by a coagulum, which extended lowest on the side opposite the anomalous branch. The common carotid was so thickly lined by coagulum that a probe could scarcely be introduced; not only to its division but beyond. The subclavian, however, was pervious throughout, as well as the arteries of the arm. The external mammary arteries, where they leave the axillary, were enlarged; the internal mammary was natural. The clavicle was found carious and entirely disunited about the middle. A number of lymphatic glands were in a state of scrofulous suppuration.

"The separation of the ligature in this case on the fourteenth day, spontaneously, and without hemorrhage for a number of days, conclusively proves to my mind that all the purposes of ligature were completely answered; that adhesion was fully effected, and that the ulceration, which went on so insidiously at the bottom of the wound, while the upper part appeared healing, was the sole cause of the death of my patient.

"For full description of the operation and post-mortem examination, see *Hospital Register*, vols. i. and ii.; also, *Velpeau's Oper. Surg.*, Am. ed."

Quite a number of the specimens contained in this collection belong to and are the result, in many instances, of the operations of Dr. A. B. Mott. Had the arrangement of the specimens been made in a more systematic manner, the catalogue would have been of more value and usefulness, not only to the student, but to the general reader.

ART. VI.—*Anatomy, Descriptive and Surgical.* By HENRY GRAY, F.R.S., Lecturer on Anatomy at St. George's Hospital. Super-royal 8vo., pp. 750. John W. Parker & Son: London. 1858.

FOR this truly admirable work the profession is indebted to the distinguished author of Gray on the Spleen, and Dr. H. V. Carter, Designer and editor *a latere.*

The vacancy it fills has been long felt to exist in this country. Anatomical works of all kinds abound, it is true; but it is no dispraise to say that as yet the most comprehensive among them are to be recognized as the works of men who have been laborers in their own special departments of the science. Quain, for instance, as edited by Sharpey and Ellis, is thorough as far as it goes, and gives us an admirably-systematized arrangement of the "Elements of Anatomy." We are also indebted to various other authors for their excellent operative surgeries. Mr. Gray, however, writes throughout with both branches of his subject in view. His description of each particular part is followed by a notice of its relations to the parts with which it is connected, and this, too, sufficiently ample for all the purposes of the operative surgeon. After describing the bones and muscles, he gives a concise statement of the fractures to which the bones of the extremities are most liable, together with the amount and direction of the displacement to which the fragments are subjected by muscular action. The section on arteries is remarkably full and accurate. Not only is the surgical anatomy given of every important vessel, with directions for its ligation, but at the end of the description of each arterial trunk we have a useful summary of the irregularities which may occur in its origin, course, and termination.

In that philosophic serial, the Transactions of the Pickwick Club, Mr. C. Dickens notes the case of an author, who, having occasion to prepare an article on Chinese metaphysics, consulted the British Encyclopedia. He read for China under the letter C, and metaphysics under the letter M, "and combined his information, sir." We shall not consume a page to answer those who are of course prepared to ask, Why not keep "each department of our study" separate? Why not have two sets of text-books—two sets of plates—two sets of thoughts, if you please, at all times for the student—to be purchased by him at separate seasons, each separate item in its order? Why should not the student himself collect the facts in separate parcels, as they were collected by his teachers before him? They did not mix up the two when they were at work with their sketch-books and note-books and their subject on the table, nor did they accumulate their memoranda of demonstrative anatomy upon the occasions when they were performing operations in the amphitheatre in the presence only of their suffering patient and an admiring audience. Then why should he? Why, indeed? Nevertheless, such has been our experience of the proper course of teaching. Arrest the attention of your class, say we, as quickly and effectually as you can; let them get into the heart of your subject in any way they prefer, and which proves easiest and most direct to them. There is no essential reason whatever why their difficulties should repeat your difficulties.

We have a capital illustration of this furnished in the plates of the volume before us. Mr. Holden, in his recent work on "Human Osteology," having marked the muscular attachments on the bone in dotted lines, and having written the name of the muscle on the surface of attachment, instead of below with a numeral reference, as heretofore practiced, Dr. Carter has carried out this idea and applied it to all other portions of the body, so that every muscle, artery, and nerve has its name written upon it. By written, we mean printed—clearly, distinctly, legibly. It is true, this mars somewhat the artistic effect of the plates, but it renders them infinitely more useful and easy of reference, the student being able to turn directly from the plate to the subject, instead of being bewildered by having to hunt up marginal notes, as formerly. The muscle or bone labeled this or that, he remembers in connection with other bones and muscles also labeled in like manner. He sees them, and thinks of them by their proper names. His associations and random recollections are with useful words, and not with figures.

We cannot too highly praise these illustrations. Those of Holden should not be compared with them. Holden's are lithographic, the dotted lines representing the muscular attachments are in colors, and no effort has been spared to give them artistic finish and expression. But Carter's are wood-cuts—lie in the body of the letter-press, are cheaper, of course, and more readily accessible. They often partake of the character of diagrams, rather than finished drawings; as in the case of the plates of the brain and nervous system, to which we would particularly refer. But they are uniformly clear and accurate, and always succeed in telling their story. They are the best wood-cut anatomical illustrations we have seen.

They are original, too, as the preface tells us, either copied from or corrected by recent dissections, made jointly by the author and Dr. Carter. Our eyes are not wearied by looking over for the hundredth time the retouched plates of Wilson, nor shocked to discover a piracy in the first degree from some continental work. With the exception of those relating to the veins of the spine, for which full credit is given to Breschet, and those illustrating the lymphatic system, which the author himself states to be taken from Mascagni, the cuts of this book are not copies of those of any other anatomy.

A word as to the letter-press. Mr. Gray has done his part well. His style is in general good, is only occasionally obscure, and more French and Scotch than English. The difficulty of correcting the proofs of such a book is very great, and we shall be prepared to see a few inaccuracies, such as, *is* for *it*, *is* for *are*, and *are* for *is*, oblique line of *tibia* for oblique line of *fibula*, "the middle bifurcation of the linea aspera," corrected in subsequent editions. As a Briton, too, Mr. Gray is to be thanked for having heard of such a man as Cruveilhier. In his description of the muscles he has adhered to the English method of classification, and describes with national accuracy the interminable layers of muscles on the back; but in speaking of the muscles of the anterior part of the thigh, he does mention the impossibility of separating the crurœus from the vastus internus, and the analogy which exists between the mass usually described as quadriceps femoris and the triceps extensor brachialis. It is noble thus candidly to admit that there is a continental city named Paris, the seat of a medical school, where no other classifications are in use than those of M. Cruveilhier.

What a labor to get up such a work in such a style! The type is good, paper excellent, price rather cheap than otherwise. We trust sincerely that Gray and Carter's Anatomy will not be republished in this country without a license from the author.

ART. VII.—*Contributions to Operative Surgery and Surgical Pathology.* By J. M. CARNOCHAN, M.D., Professor of Surgery in the New York Medical College, Surgeon-in-Chief to the State Emigrants' Hospital, etc. With Illustrations drawn from Nature. Part II. 4to., pp. 33–77. Philadelphia: Lindsay & Blakiston. 1858.

THE second part of this work has appeared somewhat later than had been promised by its publishers; it contains an account of a case of exsection of the entire ulna, a case of facial neuralgia, with remarks on this affection, and three cases in which the superior maxillary branch of the fifth pair of nerves was exsected, beyond Meckel's ganglion, for obstinate facial neuralgia.

Much credit is due to American surgeons for their success in exsecting bones in their continuity, and we may justly claim priority in several of the more important of this class of operations. Notwithstanding Dr. Carnochan gives to Dupuytren the credit of having first removed a portion of the inferior maxillary bone, we must insist on the claims of Dr. Deadrick, of Tennessee, who performed the operation three years earlier than the distinguished French surgeon. The entire clavicle was exsected for the first time, in 1813, by Dr. McCreary, of Kentucky, an operation which was performed twelve years later by Dr. Mott, and which, since that time, has been successful in the hands of several American surgeons. In regard to removal of the entire ulna, we would remind the author that he is not, as he seems to suppose, the deviser of the operation, as Dr Robert B. Butt, of Virginia, exsected the whole of the left ulna in 1825, for the same reasons as in the case before us, and with results so happy that the patient was able to resume his occupation as a wood-joiner.

The case of Dr. Carnochan is a particularly interesting one, as it is accompanied with a very full history and description of the operation, and the after appearance and use of the limb. The patient was an Irishman, thirty years of age, who sprained his arm in such a manner as to give rise to severe inflammation from the wrist up to the shoulder-joint. When he entered the State Emigrants' Hospital, the arm was greatly enlarged and indurated, being the seat of exquisite pain, and the integuments were of a purplish color. The constitution sympathized with the local disorder, and the patient was much emaciated. Incisions were made into the parts, followed by the escape of some pus and blood, and appropriate local and constitutional remedies were employed. Abscesses formed over the ulna, giving rise to sinuses, through which dead bone could be discovered. At the expiration of eighteen months the bone was removed; the wound had united in two weeks, and in three weeks more the patient was discharged, cured, from the hospital. The bone was found to be greatly hypertrophied, the seat of caries, necrosis, cloacæ, and eburnation, and weighed nearly eight ounces. These appearances are well shown in two admirable lithographs.

About two years after the operation we had an opportunity of seeing the patient, who presented himself to us on account of a glandular abscess in the right axilla. He was evidently of a strumous habit of constitution. We were struck with the slight deformity and the great usefulness of the limb, all the functions being performed nearly as well as on the sound side.

In the paper on neuralgia of the face, a very remarkable case is related of a man on whom twelve operations had been performed in the space of five years and a half, for severe neuralgia of the second branch of the fifth pair. These consisted in the removal, at various times, of a portion of the nerve, but without any material benefit. The last operation was performed by the author in October, 1857, when about an inch of the nerve was excised. This was followed by an amelioration of the symptoms, but occasional paroxysms afterwards took place. The author states that about one-half an inch of the nerve still remains in front of the ganglion of Meckel, both of which he shall remove if it be deemed necessary.

The third and last paper of this work treats of a novel and bold procedure of the author in intractable cases of neuralgia. This consists in removal of the whole of the second branch of the fifth pair at the foramen rotundum, together with the ganglion of Meckel. The reasons given for the operation may be seen from the following extract:—

> "When even a large portion of the trunk of the second branch of the fifth pair has been simply exsected from the infra-orbital canal, the ganglion of Meckel continues to provide, to a great extent, the nervous ramifications, which will still maintain and keep up the diversified neuralgic pains. Besides the ganglion of Meckel, being composed of *gray matter, must play an important part as a generator of nervous power*, of which, like a galvanic battery, it affords a continual supply, while the branches of the ganglion, under the influence of the diseased trunk, serve as conductors of the accumulated morbid nervous sensibility."

Dr. Carnochan adduces three cases treated in this way, all of which have been followed by cures; whether or not the cures have been permanent we are not informed. In all of these cases the nerve was found to be enlarged, vascular, and engorged, appearances which are imperfectly represented in the lithograph.

We look forward with pleasure for the appearance of the next part of this work, which has already proved that its author is an excellent anatomist, a bold operator, and an original thinker.

ART. VIII.—*First Principles of Physics or Natural Philosophy.* By BENJAMIN SILLIMAN, Jr., M.A., M.D., Professor of General and Applied Chemistry in Yale College. 12mo., pp. 720. Philadelphia: Henry C. Peck & Theodore Bliss. 1859.

AMONG the many works which are issued from the press, it is pleasant to find occasionally a book which fulfills the wants of the student. The majority of the text-books on natural philosophy may be divided into two classes: those which have been simplified to adapt them to the comprehension of "babes and sucklings," and those which are so exclusively mathematical that one glance at their abstruse formulæ is quite sufficient to satisfy any ordinary reader.

But here we have a work free from these peculiarities, which is equally valuable as a text-book and as a book of reference.

The subjects are judiciously arranged, the chief principles of the science being given in large type, while the illustrations and matters of secondary importance are thrown into smaller type. In all the details of the science the work is a model of fullness and precision, and its facts are brought down to the day of publication. Our attention has been particularly called to the able manner in which the author has systematized the facts in regard to the imponderables—heat, light, and electricity. The sections on optics and acoustics will be read with special interest by members of the medical profession.

It is always a great satisfaction to consult a scientific work by an author on whose facts we can rely, and this book affords a capital illustration of the great advantage—so rarely met with in these days of paste and scissors—of an author's possessing an intimate and critical knowledge of the subjects upon which he writes.

Our thanks are due to Professor Silliman for this valuable addition to our scientific literature, and the publishers deserve great credit for the liberal manner in which the work is illustrated, as well as for printing it on capital paper and issuing it in an elegant and substantial binding.

ART. IX.—*Selections from Favorite Prescriptions of Living American Practitioners.* By HORACE GREEN, M.D., Emeritus Professor of the Theory and Practice of Medicine in the New York Medical College, etc. 8vo., pp. 206. Willey & Halsted: New York. 1858.

FROM the title of this work we had expected to find a more diversified collection of formulæ from the majority of American physicians, inasmuch as Dr. Green was, as he states, in the habit of being visited annually by nearly one thousand practitioners from different parts of the country, from whom he gleaned the basis of the volume before us. Some of the prescriptions are not American, and should, therefore, have been excluded; and some of their authors are dead, so that we have a right to find fault with the title of the work. These formulæ are arranged under their proper heads and many, no doubt, are useful and are capable of fulfilling the indications for which they are intended. We would, however, caution the young practitioner from using any particular formulæ for any one disease, merely because the diagnosis is made out and such a one is recommended. We enter our protest against works of this nature being placed in their hands, as they generally do more harm than good.

ART. X —*A Treatise on Venereal Disease.* By JOHN HUNTER, F.R.S., with Copious Additions, by Dr. PHILIP RICORD. Translated and edited, with Notes, by FREEMAN J. BUMSTEAD, M.D., Lecturer on Venereal at the College of Physicians and Surgeons, New York, etc. Second Edition, revised, containing a Résumé of Ricord's Recent Lectures on Chancre. 8vo., pp. 552. Blanchard & Lea: Philadelphia. 1859.

THE present edition of Ricord and Hunter on venereal is rendered more interesting and complete by the additions of the American editor, of the recent views of Dr. Ricord on chancre, of which he has incorporated full notes in the text. A complete summary of these views will be found in the second volume of this journal, in a review of M. Fournier's work, so that it will be unnecessary to speak of them at this time. This work has been for a number of years before the profession, and has met with their warmest approval, its teachings being almost universally adopted. We give it our most hearty commendations, believing, as we do, that it is the most able, satisfactory, and comprehensive work of the kind, on the subject of which it treats, in any language.

Original Communications.

ART. I.—*Contributions to Obstetric Jurisprudence.* By HORATIO R. STORER, M.D., of Boston.

CRIMINAL ABORTION (CONTINUED.)

II. ITS FREQUENCY, AND THE CAUSES THEREOF.

THOUGH we cannot at once, and in exact figures, show the yearly amount of criminal abortion in this country, statistics on the subject being necessarily imperfect or wanting, we may yet arrive at an approximate result. This is done by an easy and reliable process of induction, the several factors of which, each of itself rendering probable the conclusion, tend, when combined, to make it almost absolutely certain.

We are to consider, in this connection, the evidence afforded by—

I.—The comparative increase of population.
II.—The published records of still-births.
III.—The number of arrests, or trials for abortion.
IV.—The published number of immediate maternal deaths.

V.—The pecuniary success of abortionists, and abortion-producing nostrums.

VI.—The comparative size of families in present and past times.

VII.—The experience of physicians—direct from applications for abortion and actual cases, and indirect from their results.

Several of these points are as yet almost wholly uninvestigated. They are stated, therefore, with care, as bearing decidedly on the question at issue, and as tending to provoke still further research.

To go into an elaborate comparison of our national and state censuses with themselves, past and present, with each other, and with those of similar communities abroad, involving, as it would do, intricate calculations regarding the effect of emigration from state to state, and from nation to nation, the increase of urban population, and the frequent decrease of rural, is not our present intention, nor is it necessary. By considering this point in connection with that immediately succeeding it, with which it is intimately related, its bearing and importance will at once be seen.

Statistics in this country are as yet so imperfect, that we are necessitated to a process of deduction. If it can be shown that a state of things prevails elsewhere to a certain extent, explainable only on one supposition, and that the same state of things prevails in this country to a greater extent, all other causes, save the one referred to, being in great measure absent, little doubt can be entertained of the part this plays; but if it can, in addition, be proved that this cause must necessarily be stronger with us than elsewhere, then its existence becomes morally certain. Accordingly, if we find that in another country living births are steadily lessening in proportion alike to the population and to its increase, that natural or preventive causes are insufficient to account for this, while the proportion of still-births and of known abortions is constantly increasing, and these last bear an evident yet increasing ratio to the still-births; that in this country the decrease of living births, and the increase of still-births, are in much greater ratio to the population, and the proportion of premature births is also increasing; that these relations are constant and yearly more marked, we are justified in supposing that abortions are at least as frequent with us, and probably more so.

In many countries of Europe, it has been ascertained that the "fecundity" of the population, or the rate of its annual increase, is rapidly diminishing.*

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* Many of the statistics now presented we have also embodied in a paper upon the decrease of the rate of increase of population now obtaining in Europe and America, read before the American Academy of Arts and Sciences, December 14th, 1858, as a contribution to the Science of Political Economy.

In Sweden, it has lessened by one-ninth in 61 years. In Prussia, by a third in 132 years. In Denmark, by a quarter in 82 years. In England, by two-sevenths in a century. In Russia, by an eighth in 28 years. In Spain, by a sixth in 30 years. In Germany, by a thirteenth in 17 years. In France, by a third in 71 years.*

Or, in other words:

In Sweden it has lessened by a fifth; in Prussia, by a fourth; in Denmark and England, by a third; and in Russia, Spain, Germany, and France by a half, in a single century.

For the sake of convenience, larger bodies of statistics existing concerning it, and from the fact that it represents the extreme of the alleged decrease, we take France for our comparisons.

In France at large, according to the official returns as analyzed by Legoyt, the increase of the population which, from 1801 to 1806, was at the rate of 1·28 per cent. annually, from 1806 to 1846 had fallen to about ·5 per cent.† The exact ratio of decrease after this point is better shown by the figures themselves. The increase from 1841 to 1846 was 1,200,000; from 1846 to 1851, 380,000; from 1851 to 1856, 256,000.

In England, during this latter period, with a population of but one-half the size, the returns of the Registrar-General show a relative increase nine times greater.‡ In thirty-seven years, from 1817 to 1854, the mean annual increase in France was not more than 155,929, yet in five years, from 1846 to 1851, it had fallen to 76,000 yearly, and from 1851 to 1856, to 51,200, and this with a population ranging from twenty-nine to thirty-four millions.

A comparison of these facts, with those obtaining in other European States, will make the above still more evident. We now quote from Rau.§

	Rate of Increase. Per Cent.
Hungary, according to Rohrer	2·40
England, from 1811 to 1821	1·78
“ from 1821 to 1831	1·60
Prussia, from 1816 to 1827	1·54
“ from 1820 to 1830	1·37
“ from 1821 to 1831	1·27
Austria, (Rohrer)	1·30
Scotland, from 1821 to 1831	1·30
Netherlands, from 1821 to 1828	1·28

	Rate of Increase. Per Cent.
Saxony, from 1815 to 1830	1·15
Baden (Heunisch,) from 1820 to 1830	1·13
Bavaria, from 1814 to 1828	1·08
Naples, from 1814 to 1824	0·83
France (Mathieu,) from 1817 to 1827	0·63
France, more recently, (De Jonnés)	0·55

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[*] MOREAU DE JONNÉS, Eléments de Statistique, 1856, p. 202.

[†] Journal des Economistes, March and May, 1847.

[‡] Edinburgh Review, Jan. 1857, p. 342. Med. Times and Gazette, May, 1857, p. 462.

[§] Lehrbuch der Politischen Oekonomie.

A similar and corroborative table, containing additional matter, is given by Quetelet;* its differences from the preceding are owing to its representing a series of different years.

	Rate of Increase. Per Cent.		Rate of Increase. Per Cent.
Ireland	2·45	Austria	1·30
Hungary	2·40	Bavaria	1·08
Spain	1·66	Netherlands	0·94
England	1·65	Naples	0·83
Rhenish Prussia	1·33	France	0·63

And more recently, Legoyt brings up these results to the close of 1846.† As shown by the census, the rate of increase was, in

	Per Cent.		Per Cent.
Great Britain, exclusive of Ireland	1·95	Sardinia	1·08
Prussia	1·84	Holland	0·90
Saxony	1·45	Austria	0·85
Norway	1·36	Sweden	0·83
		France	0·68

Or, as shown by the annual excess of births over deaths, and therefore more reliable—

	Per Cent.		Per Cent.
Norway	1·30	Austria	0·90
Prussia	1·18	Saxony	0·90
Sweden	1·14	Hanover	0·85
Holland	1·03	Belgium	0·76
Wurtemberg	1·00	Bavaria	0·71
Great Britain, exclusive of Ireland	1·00	Russia	0·61
Denmark	0·95	France	0·50

In four departments of France, among which are two of the most thriving of Normandy, the deaths actually exceed the births.‡

From the above facts, it would naturally be supposed that the percentage of births to the whole population must be smaller than in other European countries, and from the lessened annual rate of increase of the population, that the proportionate number of births must be decreasing in similar ratio. This is found, indeed, to be the case.

From large statistics furnished by De Jonnés, we have compiled the following table of the comparative ratios of births to the population in the principal countries of Europe:—

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* Sur l'Homme et la Developpement de ses Facultés, tome i. ch. 7.

† Journal des Economistes, May, 1847.

‡ MILL, Principles of Political Economy, i. p. 343.

	Ratio.
Venice and Dependencies, 1827	1 to 23
Tuscany, 1834	“
Lombardy, 1828	1 to 24
Russia, 1835	1 to 25
Wurtemberg, 1821 to 1827.	“
Prussia, 1836	“
Mecklenburg, 1826	1 to 26
Sardinia, 1820	“
Naples and Dependencies, 1830	“
Greece, 1828	“
Poland, 1830	1 to 27
Ireland, 1821 to 1831	“
Germany, 1828	“
Switzerland, 1828	“
Spain, 1826	“
Portugal, 1815 to 1819	1 to 27·5
Sweden, 1825	1 to 28
Holland, 1832	“
Austria, 1829	“
Belgium, 1836	“
Bavaria, 1825	“
Two Sicilies, 1831	“
Sweden and Norway, 1828	1 to 30
Denmark, 1833	“
Roman States, 1836	“
Turkey, 1835	“
Hanover, 1835	1 to 31
Sicily, 1832	“
Austria, 1828 to 1830	1 to 32
Great Britain, 1821 to 1831	“
Scotland, 1821 to 1831	1 to 34
England, 1821 to 1831	1 to 35
Norway, 1832	“
France, 1771 to 1851	1 to 25 to 1 to 37

In a total population, at different periods, of 232,673,000, there were 8,733,000 births; whence an average on the grand scale of one birth to every 26·6 individuals.

In France, however, the ratio has been steadily lessening, as seen by the following table:—

	Ratio of births.
1771 to 1775	1 to 25
1801 to 1810	1 to 30
1811 to 1825	1 to 32
1826 to 1836	1 to 33
1836 to 1840	1 to 34
1841 to 1845	1 to 35
1846 to 1850	1 to 37

The position of France, as compared with the rest of Europe, in respect to the ratio of births to the population at different periods, is made still more manifest by another table:—

Annual ratio of births.	
1 to 23	Venetian Provinces, 1827; Tuscany, 1834.
1 to 23·5	Kingdom of Naples, 1822 to 1824.
1 to 24	Tuscany, 1818; Sicily, 1824; Lombardy, 1827 to 1828; Russia, 1831.
1 to 24·5	Prussia, 1825 to 1826.
1 to 25	France, 1781; Austria, 1827; Russia, 1835; Prussia, 1836.
1 to 26	Sardinia, 1820; Hanover, Wurtemberg and Mecklenburg, 1826; Greece, 1828; Naples, 1830.
1 to 27	Spain, 1826; Germany and Switzerland, 1828; Poland, 1830; Ireland, 1831.
1 to 27·5	Portugal, 1815 to 1819.

1 to 28	Holland, 1813 to 1824; Bavaria and Sweden, 1825; Austria, 1829; Belgium, 1836.
1 to 29	Canton Lucerne, 1810; Holland, 1832.
1 to 29·8	France, 1801.
1 to 30	Sweden and Norway, 1828; Belgium, 1832; Denmark, 1833; Turkey, 1835; States of the Church, 1836.
1 to 31	Sicily, 1832; Hanover, 1835.
1 to 31·4	France, 1811.
1 to 31·6	France, 1821.
1 to 32	Austria, 1830; Great Britain and Switzerland, 1831.
1 to 33	France, 1828 to 1831.
1 to 34	Norway and Holstein, 1826; Scotland, 1831; France, 1834 to 1841.
1 to 35	Denmark, 1810; England, 1831; Norway, 1832.
1 to 37	France, 1851.

In Paris, strange to say, the decrease in the ratio of births to the population, though decided and steady, has not, in actual proportion, been as great as in the empire at large, showing that the cause, whatever we find it to be, is not one depending on the influence of a metropolis alone for its existence.

From 1817 to 1831 there averaged, in Paris, one birth to 26·87 inhabitants; but from 1846 to 1851, one to 31·98.*

Again, as might have been expected, we find that the proportion of still-births, in which we must include abortions, as has hitherto been done, however improperly, in all extensive statistics, is enormous, and is steadily increasing. To show this the more plainly, we first present a table of the ratio of still-births to the living births in the various countries of Europe.†

Geneva,‡ 1824 to 1833	1 to 17
Berlin Hospitals, 1758 to 1774	1 to 18
Paris Maternité,§ 1816 to 1835	1 to 20
Sweden, 1821 to 1825	1 to 23·5
Denmark, 1825 to 1834	1 to 24
Belgium,‖ 1841 to 1843	1 to 24·2
Prussia,¶ 1820 to 1834	1 to 29
Iceland, 1817 to 1828	1 to 30
Prague, 1820	1 to 30
London Hospitals, 1749 to 1781	1 to 31
Vienna, 1823	1 to 32
Austria, 1828	1 to 49
France at large, 1853	1 to 24
Department of Seine	1 to 15
Paris,** 1836 to 1844	1 to 14·3
" 1845 to 1853††	1 to 13·8

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* HUSSON, Les Consummations de Paris, 1856.

† Compiled from DE JONNÉS.

‡ 10,925 births; 646 still-births.

§ Births, 52,538; still-births, 2624.

‖ Compiled from QUETELET, Theory of Probabilities, p. 152; 406,073 living births; 16,767 still-births.

¶ Births, 7,593,017; still-births, 257,068. 1839–41, 1 to 26; ELLIOTT, Hunt's Merchants' Magazine, July, 1856.

** 2080 still-births.

†† 2349 still-births.

The proportion of still-births in the rural districts of France is governed by the same laws as in the metropolis.

In 363 provincial towns the ratio was, from

1836 to 1845 . . . . 1 to 19·55 | 1846 to 1850 . . . . . . 1 to 18·8

While districts more thinly populated gave, from

1841 to 1845 . . . . . . 1 to 29 | 1846 to 1850 . . . . . . 1 to 27*

In Belgium, during a similar period, the ratio was much the same.†

1841 to 1843, in towns . 1 to 16·1 | 1841 to 1843, in country . 1 to 29·4

The apparent discrepancy between city and country, noticed as equally obtaining in Belgium and France, is chiefly owing to greater negligence of the country officials in registering the still-births, and to the fact, as we have seen in Paris, that the ratio of births to the population is greater in the city than in the country at large.

Finally, while the proportion of still-births to the whole number is greatly increasing in Paris, so is the number of known abortions.

We omit, for the present, the evidence afforded by arrests and trials, which we might here have turned to account. At the Morgue, which represents but a very small fraction of the fœtal mortality of Paris, and in this matter almost only crime, there were deposited during the eighteen years preceding 1855, a total of 1115 fœtuses,‡ of which 423 were at the full term, and 692 were less than nine months; and of these last, 519, or five-sixths, were not over six months, a large proportion of them showing decided marks of criminal abortion.

Again, of the 692 fœtuses of less than nine months, deposited at the Morgue during these eighteen years, 295 were between 1836 to 1845, an average, at that time, of 32·7 yearly; and from 1846 to 1855 there were 397, an average of 44·1. During the means of these periods the births in France were as follows§:—In 1841, 1,005,203, and in 1851, 1,037,040, from which it is evident that there was deposited at the Morgue, in 1841, one infant, dead from abortion, to every 30,700 births; and in 1851, one to every 23,500. The increased ratio is seen to be striking; it will hereafter become apparent that the increase is far greater in reality.

We turn now to our own country, to which the City of New York holds much the same relation, as respects public opinion no less than in other matters, that Paris holds to France.

Since 1805, when returns were first made to the Registry of New York, the number, proportionate as well as actual, of fœtal deaths, has steadily and rapidly increased. With a population at that time (1805) of 76,770, the number of still and premature births was 47; in 1849, with a population estimated at 450,000, the number had swelled to 1320.* Thus, while the population had increased only *six* times since 1805, the annual number of still and premature births had multiplied over *twenty-seven* times.

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* DE JONNÉS, loc. cit., p. 239.

† QUETELET, loc. cit., p. 152.

‡ Register of the Morgue.

§ DE JONNÉS, loc. cit., p. 193.

The following table shows the rapidity of this increase:—The ratio of fœtal deaths to the population, was in

1805	1 to 1633·40	1830	1 to 597·60
1810	1 to 1025·24	1835	1 to 569·88
1815	1 to 986·46	1840	1 to 516·02
1820	1 to 654·52	1845	1 to 384·68
1825	1 to 680·68	1849	1 to 340·90

In the three years preceding 1849, there were registered in New York 400 premature births, and 3139 children still-born; a total of 3539, representing at that time a yearly average of some 1200 fœtal deaths. While it will be shown hereafter that a large proportion of the reported premature births must always be from criminal causes, and that though almost all the still-births at the full time, even from infanticide, are necessarily registered, but a small proportion of the abortions and miscarriages occurring are ever reported to the proper authorities, it will immediately be made apparent that at the present moment the abortion statistics of New York are far above those of 1849.

In the three years preceding 1857, there were registered in New York 1196 premature, and 4735 still-births,† a total of 5931, representing a yearly average of some 2000 fœtal deaths; showing that in the short space of seven years, the number of fœtal deaths in New York, already enormous, had very nearly doubled.

Again, in 1856, the total number of births at the full time in New York, was 17,755; of these, 16,199 were living;‡ proving that of children at the full time alone, setting aside the great number of viable children born prematurely, and the innumerable earlier abortions not recorded, one in every 11·4 is born dead.

From foreign statistics on a large scale, it is found that the proportion of still-births, even allowing a wide margin for criminal causes, does not, in those countries, drop below 1 in 15, and this in France, ranging from that number up to 1 in 30 or 40 of the whole number of births reported. We have already given a table upon this point.

In Geneva, out of 10,925 births occurring from 1824 to 1833, 1221 of them being *illegitimate*, and therefore to be supposed liable to a large percentage of deaths from criminal causes, there were only 646 fœtal deaths; a proportion of 1 in 17.

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* Report of City Inspector of New York for 1849.

† City Inspector's Report for 1856. ‡ Ibid.

In Belgium there were 29,574 *illegitimate* births from 1841 to 1843, and of these, 1766 were born still;* 1 in 16·8.

In New York, from 1854 to 1857, there were 48,323 births, and 5931 still-births, at the full time and prematurely; or in other words, 1 to every 8·1 was born dead.

The ratio of still-births in New York, including, as we have seen, abortions, is steadily increasing, as seen by the following table,† in which we have compared the still-births, supposable perhaps of accidental value, with the general mortality, whose value is at least as accidental, if not more so. The evidence, like that already furnished, is astounding.

	Total mortality.	Still-births.	Ratio.
1804 to 1809	13,128	349	1 to 37·6
1809 to 1815	14,011	533	1 to 26·3
1815 to 1825	34,798	1,818	1 to 19·1
1825 to 1835	59,347	3,744	1 to 15·8
1835 to 1855	289,786	21,702	1 to 13·3
1856‡	21,658	1,943	1 to 11·1

The frequency of abortions and premature births reported from the practice of physicians, and thus to a certain extent, but not entirely, likely to be of natural or accidental origin, is as follows :—

In 41,699 cases registered by Collins, Beatty, La Chapelle, Churchill, and others,§ there were 530 abortions and miscarriages. Here all the abortions were known; their proportion was 1 in 78·5.

In New York, from 1854 to 1857, there were 48,323 births at the full time reported, and 1196 premature. Here all the abortions were not known, probably but a very small fraction of them; the proportion was 1 in 40·4.

Finally, we compare the recorded premature still-births of New York, with those still at the full time.

In the seventeen years from 1838 to 1855,‖ there were reported 17,237 still-births at the full time, and 2710 still prematurely; the last bearing the proportion of 1 to 6·3.

In the nine years, from 1838 to 1847, omitting 1842 for reasons stated below, there were 632 premature still-births, and 6445 still at the full time; a yearly average of 1 in 10·2.

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* Compiled from QUETELET, loc. cit., p. 152.

† Compiled from City Inspector's Report for 1855.

‡ Ibid. for 1856.

§ CLAY, Obstetric Cyclopedia, p. 21.

‖ Separate records of the premature births in New York were not made before this period. They were not rendered in 1842; I have therefore omitted in the calculation the still-births of the same year. For a series of the official reports, I am indebted to the present City Inspector, Mr. Geo. W. Morton.

In the eight years, from 1848 to 1855, there were 2078 premature still-births, and 10,792 still at the full time; an average of 1 in 5.

While in 1856 there were 387 still prematurely, and 1556 at the full time; or 1 in 4·02.

From these figures there can be drawn but one conclusion, that criminal abortion prevails to an enormous extent in New York, and that it is steadily and rapidly increasing. "We cannot refer," was well said by a former inspector of that city,* "such a hecatomb of human offspring to natural causes." We shall now endeavor to prove this point by other reasoning.

That our deductions concerning the population and births of France are perfectly legitimate, is admitted beforehand by the leading political economists of the day; ignorant as they were in its various relations of much of the evidence now brought forward, and of the conclusion to which the whole matter, directly and with almost mathematical exactness, is proved to tend.

"In France," remarks De Jonnés,† "the fecundity of the people is restrained within the strictest limits."

"The rate of increase of the French population," says Mill, "is the slowest in Europe;‡ the number of births not increasing at all, while the proportion of births to the population is considerably diminishing."§

We have seen, moreover, that in France the actual ratio of living births is constantly and rapidly diminishing, while the still-births, actual and proportional, are as fast increasing; that the premature births progress in similar ratio, and by deduction and actual statistics, the criminal abortions; and that these facts obtain not merely in the metropolis, but throughout the country.

What are the causes of these remarkable facts, need it now be asked? Let all allowances be made for certain conjugal habits extensively existing among the French, and by no means rarely imitated in this country, but the proportionate decrease of living births is too enormous, the actual and proportionate increase of premature and still-births is too frightful to be wholly explained thus, or as West,|| Husson,¶ and De Jonnés** have thought, to be attributed to a mere progressive lack of fecundity. Reason and the evidence alleged compel us to believe that in great measure they are owing to criminal abortion.

Political economists allow the facts in France to be as we have stated. Their interpretation of the causes, unwilling as they would be to confess its ultimate bearing, we now compel to serve as evidence.

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* Report of 1849. † Loc. cit., p. 195. ‡ Loc. cit., i. p. 344. § Ibid., p. 343.

|| Med. Times and Gazette, June 1856, p. 611.

¶ Les Consummations de Paris. ** Loc. cit.

"They depend," according to one writer,* "either on physical agents, especially climate, or on the degree of civilization of a people, their domestic and social habits." "In France the climate is favorable to an increase of population, and this obstacle, this restraint, is found in its advanced civilization."†

"This diminution of births," says Legoyt,‡ "in the presence of a constant increase of the general population and of marriages, can be attributed to nothing else than wise and increased foresight on the part of the parent."

"The French peasant is no simple countryman, no downright 'Paysan du Danube;' both in fact and in fiction he is now 'le rusé paysan.' That is the stage which he has reached in the progressive development which *the constitution of things has imposed on human intelligence and human emancipation.*"§

"These facts are only to be accounted for in two ways. Either the whole number of births which nature admits of, and which happen in some circumstances, do not take place, or if they do, a large proportion of those who are born, die. The retardation of increase results either from mortality or prudence; from Mr. Malthus's positive, or from his preventive check; and one or the other of these must and does exist, and very powerfully too, in all old societies. Wherever population is not kept down by the prudence of individuals or of the State, it is kept down by starvation or disease."||

But on the other hand, it has been forgotten that the alternative supposed does not exist in the case we have instanced. Marriages in France, unlike some other continental States, are continually increasing, and starvation and disease are yearly being shorn of their power. The authors quoted are therefore forced to a single position; that the lessening of births can only be owing to "prudence" on the part of the community.

Moreover, it is allowed by Mill and by Malthus himself,¶ that so much of the decrease as cannot thus be explained, must be attributed to influences generally prevalent in Europe in earlier ages, and in Asia to the present time. "Throughout Europe these causes have much diminished, but they have nowhere ceased to exist."** Several of them have been named by the authority now quoted. Another, and greater than them all, he leaves unspoken; we are compelled to supply for him the omission.

The practice of destroying the fœtus in utero, to say nothing of infanticide, history declares to have obtained among all the earlier nations of the world, the Jews alone excepted, and to a very great extent. Aristotle

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* DE JONNÉS, loc. cit., p. 194. † Ibid., p. 195. ‡ Journal des Economistes, 1847.

§ MILL, loc. cit., i. p. 336. The italics are my own. I shall hereafter refer back to this passage.

|| Ibid., i. p. 417. ¶ Essay on Population. ** MILL, loc. cit., i. p. 417.

defends it,* and Plato.† It is mentioned by Juvenal,‡ Ovid,§ Seneca, and Cicero, and is denounced by the earlier Christians.|| It was common in Europe through the middle ages, and still prevails among the Mohammedans,¶ Chinese,** Japanese,†† Hindoos,‡‡ and most of the nations of Africa and Polynesia,§§ to such an extent, that we may well doubt whether more have ever perished in those countries by plague, by famine, and the sword.

It is evident, therefore, that the actual and proportionate increase of still-births, and, by induction, setting aside all probable cases of infanticide, of abortion, and the comparative increase of a population reciprocally influence and govern each other so completely, that from the one it may in any given case be almost foreseen what the other must prove.

It is impossible that the results quoted from the Registry of New York, any more than those of France, even if so far, can in any great measure be owing to natural causes alone. They are wholly inexplicable on any principles, "which do not recognize an amount of guilt at which humanity shudders." In comparing that city with Paris, certain allowances must indeed be made; abroad, for the effects of wars and conscription, of despotism, and of migration outward; at home, for the effects of governmental laxity, and of migration inward. In both cities the amount of prostitution, an element not to be lost sight of, must be nearly the same; and in both, under the steady progress of science, medical and hygienic, the ratio of fœtal mortality, unless induced by criminal causes, may year by year be supposed to have been steadily diminished.

We have seen that in New York, in the absence of all influences that tend to keep down population in foreign countries, old and crowded, and under the yoke of despotism, the effects, attributable elsewhere to these causes, exist, and to a greater degree than in any other country;

That the ratio of fœtal deaths to the population had swelled from 1 in 1633, in 1805, to 1 in 340, in 1849; while in France, at a later period, 1851, they were only about 1 in 1000;

That the actual number of fœtal deaths in seven years, from 1850 to 1857, had very nearly doubled;

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* Travels of Anacharsis, v. p. 270. † Ibid., iv. p. 342. ‡ Satires, vi., v. 592.

§ Amor., lib. 2.; Heroïdes, epist. 2. || REEVE'S Apologies.

¶ BLAQUIERE, Letters from the Med., pp. 90, 184; SLADE, Records of Travels, ii. p. 162.

** BARROW, Travels in China, p. 113; DE PAUW, Philosoph. Dissert; MEDHURST, China, &c., p. 45; SMITH, Exploratory Visit, &c., i. p. 53.

†† GOLOWNIN, Memoirs of a Captivity, iii. p. 222.

‡‡ MOOR, Hindoo Infanticide, p. 63; BUCHANAN, Christian Researches in Asia, p. 49; WARD, View of the History, &c., of the Hindoos, p. 393.

§§ For a long list of authorities on these points, see BECK, ii. p. 389, et seq.

That the fœtal deaths, as compared with the total of births, elsewhere in cases of illegitimacy, where the results are the very worst, and where crime is confessed to have produced them, being 1 in 16·8,* had here, legitimate and natural, reached the frightful ratio of 1 in 8·1;

That the fœtal deaths, as compared with the total mortality, had increased from 1 in 37, in 1805, to 1 in 13, in 1855;

That the reported early abortions, of which the greater number of course escape registry, bear the ratio to the living births of 1 in 40·4, while elsewhere they are only 1 in 78·5;

And finally, that early abortions, bearing the proportion to the still-births at the full time of 1 in 10·2, in 1846, had increased to 1 in 4·02, in 1856.

It must be borne in mind that these statistics are positive, proving the existence of a certain number of pregnancies abruptly terminated. They cannot therefore be controverted by any argument regarding means for the prevention of pregnancy, no matter to what extent these may be used. Nor should it be forgotten that for every registered premature birth or abortion, innumerable ones occur that are never recorded.

Almost doubling therefore, as does New York, the worst of those fearful ratios of fœtal mortality existing in Europe, it is not strange that our metropolis has been held up, even by a Parisian, to the execration of the world. "On le voit (l'avortement)" says Tardieu, "en Amérique, dans une grande cité comme New York, constituer une industrie véritable et non poursuivie."

In this description of New York, we have that of the country.† The relative annual increase of the population existing throughout America, depending as this does chiefly on immigration, must not mislead us. The ratio of fœtal death in the metropolis surpasses what has ever been dreamed to obtain even in old countries, where innumerable more legitimate causes for it might be thought to exist. At Boston, which for morals is allowed to compare favorably with any city of its size in the Union, "undoubtedly more than a hundred still-births yearly escape being recorded, a large proportion of which, no doubt, result from criminal abortion."‡ And our public prints, far and wide, even in the smaller towns and villages, constantly chronicle deaths from the commission of the crime.

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* Belgium.

† Local exceptions to this general rule will of course be found to exist, as is always the case with laws based on mere statistics, especially, as here, where reports to the registry are liable, for evident reasons, to be withheld. Thus it appears from Dr. Jewell's collections (this Journal, March, 1857, p. 277,) that the proportion of still-births in Philadelphia was, in 1856, only 1 in 913 to the total population, and 1 in 20·1 to the general mortality, against which evidence must be placed that which we subsequently furnish from Prof. Hodge.

‡ MSS. Letter from City Registrar, March 26, 1857

In the State of Massachusetts at large, it has been found of late years that "the increase of the population, or the excess of the births over the deaths, has been *wholly* of those of *recent foreign origin;*"* this in 1850. In 1853 "it is evident that the births within the Commonwealth, with the usual increase, have resulted in favor of foreign parents in an increased ratio."† In other words, it is found that in so far as depends upon the American and native element, and in the absence of the existing immigration from abroad, the population of Massachusetts is stationary or decreasing.‡

"This result will doubtless surprise many, who will hardly think it possible. Is it general, or is it accidental? If it be general, how has it happened? What causes have been in operation to produce it? How is it to be accounted for?"§ These questions have hitherto been unanswered. We shall find, however, their solution only too easy.

Amid such general thrift and wealth, there has been every reason for the native, like the foreign population, to increase. The preventive check of the economists, though undoubtedly present, can have played but an inferior part, as we shall prove. Emigration westward, the only apparent positive check, though extensive, cannot wholly account for the result.

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[*] CHICKERING, Comparative View of the Population of Boston, 1850. City Document, No. 60, p. 44.

[†] Twelfth Registration Report to the Legislature of Massachusetts, 1853, p. 116. The truth of this statement has been corroborated by Dr. Curtis, in his Report on the Census of Boston in 1855. City Document, 1856, p. 22. Also, Fifteenth State Registration Report, 1856, p. 179.

[‡] "Had the rate of the annual increase of the numbers living under the age of five (3·13 per cent.) resulted entirely from the increase of births in a permanent population, the number of births of 1855 (in the districts where the ratio of the registered deaths to the population was greater than one to sixty-three, 166 of the 331 towns) would have been 24,457, instead of 23,481, the number registered. On the other hand, had the increase resulted wholly from migration, (the annual number of births in the permanent population being constant,) the number of births would have been only 22,956. The number of births registered is somewhat nearer the latter than the former of these two values.

"Assuming the correctness of the births, deaths, and population, in the selected districts, it appears that 35 per cent. of the increase of the population under the age of five was due to births in the permanent portion of the population, and 65 per cent. due to the movement of the migratory portion; also, that 38 per cent. of the increase of population at all ages was due to excess of births over deaths, leaving 62 per cent. to be accounted for by excess of immigration over emigration."—ELLIOTT, The Laws of Human Mortality in Massachusetts; Proceedings of Am. Assoc. for Adv. of Science, Montreal, 1857, p. 57.

[§] CHICKERING, loc. cit., p. 49.

But statistics exist by whose light, if acknowledged, we may read this important problem.*

In 1850, the ratio of births to the population in Massachusetts, foreign and American combined, was 1 in 36,† and in 1855, 1 in 34;‡ a ratio much smaller than that obtaining in most countries of Europe, and about equaling that of France, which, in 1850, was 1 in 37.

In 1855, the ratio of still-births, at the full time and premature, as compared with the living births, was 1 to 15·5.§ In France it is 1 to 24; in Austria, 1 to 49.

In 1851, the ratio of fœtal deaths to the general mortality, was 1 to 13·3;‖ in 1855, 1 to 10·4.¶ In New York City, in 1856, it was 1 to 11. In any city we should expect to find the proportion much greater than in a State at large; we here find it less.

The ratio of premature births to those at the full time, during the period from 1850 to 1856, was 1 to 26·1.** In New York, in 1857, it was 1 to 40, and in good medical practice it is found, as we have seen, to be 1 in 78.

In comparing the recorded abortions and premature births in the City of New York, with the still-births there occurring at the full time, we found that the former had varied from 1 in 10, in 1838, to 1 in 4, in 1856.

In the State of Massachusetts it appears, that during the fourteen years and eight months preceding 1855, there were recorded 4570 still-births, and 11,716 premature births and abortions,†† the ratio being 1 abortion to ·3 still-birth; or, in other words, it would appear from the statistics quoted, that the comparative frequency of abortions in Massachusetts is *thirteen* times as great as in the worst statistics of the City of New York. We are willing, however, we rejoice, to modify this statement, as in the earliest of the years quoted, returns from the City of Boston seem to have been imperfect or wanting,—and to confine our calculations to a more recent period.

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* The tables now presented, we have compiled from the fifteen published Registration Reports of the State of Massachusetts. Advance sheets of the Sixteenth Report have kindly been furnished me while this article is passing through the press, by the compiler, Dr. Josiah Curtis, of Boston. The premature births for 1856 and 1857 are not given in the reports for those years, so that I cannot extend my calculations beyond 1855. Deductions from the still-births at the full time, which are alone given in the years referred to, are of course useless for the present inquiry.

† Births, 27,664; population, 994,665.

‡ Births, 32,845; population, 1,132,369.

§ Total births at full time, 32,845; living births at full time, 32,120. Fœtal deaths, 2064; still, at full time, 725; premature, 1339.

‖ Total deaths, including 1462 fœtal, 19,461.

¶ Total deaths, including 2064 fœtal, 21,523.

** Births at full time, 154,245; premature, 5899.

†† Fourteenth Registration Report, 1855.

From 1850 to 1855, the registration being much more accurate than before, and its results compiled with the greatest care, three years of the five by a noted statistician, Dr. Shurtleff, there were recorded in Massachusetts, 2976 still-births, and 5899 premature births and abortions,* the ratio being 1 abortion to ·5 still-birth; in other words, the frequency of abortions as compared with still-births at the full time, seems at least eight times as great in Massachusetts as in the worst statistics of the City of New York.†

It must not be forgotten that while nearly every still-birth at the full time is necessarily recorded, there must be but very few registrations of the premature births and abortions actually occurring; that though the contrary seems here the case, such occurrences are generally, as they would be supposed, far more frequent in crowded cities than in country districts, or in a State at large; and that however great may be the influence of the prevention of pregnancy in repressing a population, these constitute proofs of pregnancies actually occurring, and frequently criminally terminated.

Few persons could have believed possible the existence of such frightful statistics, the result toward which they must be confessed inevitably to tend, or the dread cause from which they spring. Either these statistics must be thrown aside as utterly erroneous and worthless, or they must be accepted with their conclusions. We would gladly do the former, but they present too many constant quantities, in other respects,‡ for this to be allowed. Our own calculations have been made with care, and we have presented the elements on which they rest. In asserting the results, at once so awful and astounding, we desire to fix upon them the attention and scrutiny of the world.

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* Fourteenth Registration Report, 1855.

† In the above remarks we must not be misunderstood. We believe Massachusetts no worse with regard to abortion than many other portions of the country, but that its registration is conducted with greater care. From the statistics given it may easily be surmised what the amount of this crime *must be elsewhere*. It is necessarily of infinitely more common occurrence than infanticide, the murder of children after birth, for proof of the frequency of which, at the present moment, in Great Britain, we refer to Dr. Burke Ryan's Fothergillian Essay on the subject in the London Sanitary Review for last July, and to the London Lancet of corresponding date.

‡ As, for instance, in the regularly progressive series of deaths and births, as compared with the population; constant also as compared with each other:—Population of Massachusetts: by census of 1850, 994,665; 1855, 1,132,369. Deaths: 1851, 18,934; 1852, 18,482; 1853, 20,301; 1854, 21,414; 1855, 20,798. Births: 1851, 28,681; 1852, 29,802; 1853, 30,920; 1854, 31,997; 1855, 32,845.

We have seen that the increase of the population of Massachusetts by living births, is almost exclusively among its resident foreigners, Catholics, the rules of whose church will hereafter be shown to exercise an important influence in preventing the destruction of fœtal life. The conclusion cannot therefore well be avoided, that in these facts there exists the evident relation here intimated, of effects to cause.

With some certainty, then, even though statistics are as yet so imperfect, can we assert this conclusion, that frightful as is the extent to which the crime of abortion is perpetrated abroad, there is reason to believe that it prevails to an equal, if not even greater extent at home.

The frequency of arrests or trials for abortion afford, save indirectly, no criterion of the actual frequency of the crime. Our laws on this subject are at present so easily evaded, that officers of justice find it useless to trouble themselves with its prosecution; it is indeed "non poursuivie." During the eight years from 1849 to 1858, no report for 1853 being rendered by the Attorney-General, there were 32 trials for abortion in Massachusetts; and in these there was not a single conviction.* An estimate that for every arrest for this crime, a thousand instances of its commission escape the vigilance or at least the hand of the law, would probably be within the truth. That such is the fact, is shown by the statistics of France, where, from 1846 to 1850, out of 188 cases that came to the knowledge of the police, for lack of decisive evidence, only 22 went to trial,† or about one-ninth of those legally investigated. From 1826 to 1853, there were in France 183 trials for abortion. At the above ratio this will give about 1700 cases judicially examined, a yearly average throughout the empire of between 50 and 60. Comparing this fact with the statistics of the Morgue already given, and with those of the actual decrease of the rate of increase of the population in Paris and in New York, and the increase of premature births, our statement of its frequency will not seem exaggerated.

The number and success of professed abortionists is notorious. If arrested, they are always ready with bribes or abundant bail. Hardly a newspaper throughout the land that does not contain their open and pointed advertisements, or a drug-store whose shelves are not crowded with their nostrums, publicly and unblushingly displayed: the supply of an article presupposes its demand. From these facts we may fairly estimate the extent of their nefarious traffic.

That families are seldom now found of the size formerly common, is also a matter of general remark. It were foolish to attempt to explain this by supposing that the present is an age of more moderate desire, or less unbridled lust; there is too much collateral proof against any such plea. Nor is it reasonable to think that women are generally becoming less productive of offspring than formerly, from any natural cause; or that the mass of our population, whatever the exceptions, are already so far advanced in knowledge, physiological or mechanical, or in practice, as in most cases to be able to regulate impregnation at will. The number of pregnancies must be nearly as abundant as ever; who can doubt what becomes of the offspring? We deny, simply and decidedly, the statement of some writers, that of every seven pregnancies, at least one always *naturally* terminates in abortion; this is uncorroborated by any reliable evidence, and is without doubt untrue.

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* Reports of Attorney-General of Massachusetts, from 1849 to 1858. State Documents.

† Comptes Rendus Annuels de la Justice Criminelle.

Of the experience of physicians, there can be but one opinion. If each man of the profession were honestly to investigate this matter, and as honestly to avow the result, the mass of evidence would be overwhelming. This statement is in nowise invalidated by the experience alleged by many, especially among older practitioners; their evidence, based chiefly on lack of inquisition, or on the acknowledged less prevalence of the crime in former years, is merely negative, and as such only to be valued.

"We blush," says Prof. Hodge, "while we acknowledge the fact, that in this city, (Philadelphia,) where literature, science, morality, and Christianity are supposed to have so much influence; where all the domestic and social virtues are reported as being in full and delightful exercise, even here" it prevails.*

Dr. Blatchford, of Troy, N. Y., writes me thus: "A crime which forty years ago, when I was a young practitioner, was of rare and secret occurrence, has become frequent and bold." But why multiply instances of what must be the almost universal experience?

Applications for abortion are in many neighborhoods of constant occurrence, by no means among the poorer classes alone; and few women, unless also convinced by their physician of the enormity and guilt of that they intend, are deterred by his refusal from going elsewhere for aid, or from inducing abortion upon themselves.

But far greater proof than this we all possess, or can, if we desire. In but-few of the abortions criminally induced is an application ever made to the physician in regular standing. He is oftener called upon after the crime has already been committed, to treat its acute and immediate effects. If he choose to take for granted in every case, that it has occurred from a perfectly natural cause, even where attending circumstances clearly point to the contrary, or to ask no questions, or to shut his eyes and his ears to evident and patent facts, he can of course do so, and perhaps persuade himself that the crime is rare; but if he reflect that upon himself more than on clergyman or legislator, often rests the standard of public morals, and act accordingly, he may arrive at a different result.

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* Introductory Lecture, 1854, p. 17.

But this is not only the fact in acute cases of abortion. The same statement holds true, perhaps even to a greater extent, with regard to chronic obstetric disease. It is now acknowledged that much of this is really the consequence of past difficult or abnormal labors; that the more complicated or improperly interfered with the labor has been, the more certain are unfortunate sequelæ; and that the earlier in pregnancy its occurrence, the greater, as a general rule, the danger, not merely to the mother's life, but to her subsequent health. In the treatment of these results, even more marked perhaps at a late period than earlier, the dependence of effect on cause, and their evident connection, can often be learned by a faithful inquirer, and in no small proportion of cases does the history go back without turn or the shadow of a doubt, to an induction of criminal abortion.

As a mere matter of individual experience, and from a practice by no means exceptional, the writer some time since reported no less than fifteen such cases as occurring to himself within hardly six months; and of these, all without exception were married and respectable women,* many of them of wealth and high social standing; and subsequently he was able, in consultation, to point out similar cases in the practice of gentlemen who, at that time, had denied the legitimacy of his conclusions. This experience must be a common one, only some lack the courage, as others lack the will, to investigate the matter; should they do so, they can come but to one result.

The frequency of maternal deaths, confessedly from criminal abortion, as gathered from published statements and mortuary reports, is also an item of importance in our summary of evidence. It is probable that in but few of the fatal cases really occurring, is foul play ever thought of, especially if the standing of the victim, and her previous history, have been such as to prevent or disarm suspicion; and on the other hand, while immediate death is undoubtedly a frequent result of induced abortion, it is, in proportion to the cases of its later occurrence, or of confirmed and chronic ill health, comparatively rare. From which it must be granted, that for every case thus made known, very many others must necessarily exist.

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* Report to Suffolk Dist. Med. Society, May, 1857; New York Med. Gazette, July, 1857, p. 390; N. H. Journal of Medicine, July, 1857, p. 211.

We are compelled, from the preceding considerations, to acknowledge not merely that criminal abortion is of alarming frequency among us, but that its frequency is rapidly increasing; this having been made apparent by each link in the chain of evidence that has been presented. Every effort that might possibly check this flood of guilt will, if delayed, have so much the more to accomplish. The crime is fast becoming, if it has not already become, an established custom, less honored in the breach than in the observance.

What are the causes of this general turpitude?

They also may be classified—

I.—The low *morale* of the community as regards the guilt of the crime.
II.—The ease with which its character, in individual cases, may be concealed.
III.—The unwillingness of its victims to give testimony that would also criminate themselves.
IV.—The possibility of their inducing abortion upon themselves without aid.
V.—The ease with which the laws, as at present standing, may be evaded.
VI.—The lack or inefficacy of judicial preventives; such as statutes for registration, and those against concealment of birth and secret burials.
VII.—The prevalent ignorance of the true principles of its jurisprudence in both government officials and medical witnesses.
VIII.—Social extravagance and dissipation.
IX.—The doctrines of political economists.
X.—The fear of child-bed.

That public opinion should at present attach so little importance to the value of fœtal life, has already been shown to be owing in great measure to ignorance respecting its actual existence in the earlier months of pregnancy. Two other, and no less general, physiological errors prevail, extensively inculcated by popular authors and lecturers for their own sinister purposes.

One of these is the doctrine that it is detrimental to a woman's health to bear children beyond a certain number, or oftener than at certain stated periods, and that any number of abortions are not merely excusable, as preventives, but advisable; it being entirely forgotten that the frequency of connection may be kept within bounds, and the times of its occurrence regulated, by those who are not willing to hazard its consequences; that if women will, to escape trouble or for fashion's sake, forego the duty and privilege of nursing, a law entailed upon them by nature, and seldom neglected without disastrous results to their own constitutions, they must expect more frequent impregnation; that the habit of aborting is generally attended with the habit of more readily conceiving; and that abortions, accidental, and still more if induced, are generally attended by the loss of subsequent health, if not of life.

This error is one which would justify abortion as necessary for the mother's own good; a selfish plea. The other is based on a more generous motive. It is that the fewer one's children, the more healthy they are likely to be, and the more worth to society. It is, however, equally fallacious with the first, and is without foundation in fact. The Spartans and Romans, so confidently appealed to, gave birth probably to as many weakly children as do our own women; that they destroyed many for this reason in infancy, is notorious. The brawny Highlanders are not the only offspring of their parents; the others cannot endure the national processes of hardening by exposure and diet, and so die young from natural causes. But were this theory true even so far as it goes, the world, our own country, could ill spare its frailer children, who oftenest, perhaps, represent its intellect and its genius.

In asserting that the doctrines of the leading political economists for the last half century are accountable for much of the prevalence and increase of the crime, ignorant or careless as these writers all seem of the dire means that would be resorted to for the attainment of their ends, I have in no way exaggerated. Malthus remarks in his well-known Essay on Population, that "in the average state of a well-peopled territory, there cannot well be a worse sign than a large proportion of births, nor can there well be a better sign than a small proportion;"* and he endorses the assertion of Hume, subsequently proved false by Sadler,† that the permission of child-murder, by removing the fear of too numerous a family in case of marriage, tends to encourage this step, and thereby the increase of population; "the powerful yearnings of nature preventing parents from resorting to so cruel an expedient, except in extreme cases."‡

Sismondi§ and a host of others might also be quoted, but a few extracts from a later writer, standard in this country at present, and taught in our universities, till very lately in that at Cambridge, for instance, will suffice.

"We greatly deprecate," says Mill, "an increase of population, as rapid as the increase of production and accumulation."||

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* Loc. cit., p. 313.

† The Law of Population, 1830.

‡ HUME, Essays, vol. i. No. xi., p. 431.

§ Etudes sur l'Economie Politique; Nouveaux Principes d'Economie Politique.

|| Loc. cit., ii. p. 253.

"There is room in the world, no doubt, and even in old countries, for an immense increase of population. But although it may be innocuous, I confess I see very little reason for desiring it."

"I sincerely hope, for the sake of posterity, that they will be content to be stationary long before necessity compels them to it."*

"If the opinion were once generally established among the laboring class, that their welfare required a due regulation of the numbers of their families, only those would exempt themselves from it who were in the habit of making light of social obligations generally."† "The principles contended for include not only the laboring classes, but all persons, except the few who being able to give their offspring the means of independent support during the whole of life, do not leave them to swell the competition for employment."‡

"When persons are once married, the idea never seems to enter any one's mind, that having or not having a family, or the number of which it shall consist, is at all amenable to their own control. One would imagine that it was really, as the common phrases have it, God's will and not their own, which decided the number of their offspring."§

"In a place where there is no room left for new establishments," says Sismondi, entirely ignoring the escapes offered by emigration and the increased importation of food, "if a man has eight children, he should believe that unless six of them die in infancy, these, and three of his own contemporaries of each sex, will be compelled to abstain from marriage in consequence of his own imprudence."||

The direct result of remarks like these last, so pointed and plainly to be understood, is seen in the statistics I have so largely given. Would mankind, in following such advice, merely resort to greater abstinence before their means allow the expense of children, and to greater prudence after that period, no fault could be found ; but when we discover criminal abortion thus justified and almost legitimated, we may well oppose to such doctrine the words of the indeed admirable Percival, "To extinguish the first spark of life is a crime of the same nature, both against our Maker and society, as to destroy an infant, a child, or a man."¶

Fear of child-bed, in patients pregnant for the first time, or who had suffered or risked much in previous labors, might formerly have been allowed some weight in excuse, but none at all in these days of anæsthesia. It has been urged, and not so absurdly as would at first sight appear, that

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* Ibid., i. p. 451. An opinion to the same effect, italicized, has already been quoted.

† Ibid., ii. pp. 316, 317.

‡ Ibid., i. p. 452, foot-note.

§ Ibid., i. p. 447.

|| Nouveaux Principes, &c., liv. vii. ch. 5.

¶ Medical Ethics, p. 79.

the present possibilities of painless and so much safer delivery, by changing thus completely the primal curse, from anguish to a state frequently of positive pleasure, remove a drawback of actual advantage, and by offering too many inducements for pregnancy, tend to keep women in that state the greater part of their menstrual lives.

The consideration in detail of the various other causes to which I have alluded as accounting for the prevalence of abortion, together with that of the many special reasons offered in individual cases by way of excuse, I postpone for the present; merely premising that where ignorance is so evidently and so extensively its foundation, those who, possessing, yet withhold the knowledge which by any chance or in any way would tend to prevent it, themselves become, directly, and in a moral sense, responsibly accountable for the crime.

[TO BE CONTINUED.]

ART. II.—*Medicine in China.* By JOHN J. KERR, M.D., of Canton, China.

THE history of medicine in China is a subject which opens a wide field for investigation, and upon which comparatively little is known. It is evident that in very remote periods there were persons devoted to the practice of the healing art. History and tradition have handed down the names of many persons who were distinguished for skill and success, and some of them have been enrolled among the gods, and temples erected for their worship.

A succession of changes has occurred in the theory and practice of Chinese medicine similar to those which have marked different eras in the history of our profession in Europe. This will appear from what is said of four distinguished men who, like Hippocrates, Galen, and others, stamped the impress of their genius upon their own and succeeding ages. The first and greatest of these masters was *Cheung Chung King*, who lived in the second century of our era, and was cotemporary with Galen. He wrote an original work on fevers, not a single sentence of which, according to the Imperial College, was taken from any more ancient authority. He was distinguished for his heroic practice, giving medicine by the pound instead of ounce. His system prevailed a thousand years, when the second great author, *Lo Shau Chan*, appeared, the peculiarity of whose practice consisted in using bitter and refrigerating medicines.

In the thirteenth century the third great master, *Li Tung Tan*, introduced the elevating and strengthening plan of treating disease. This system prevailed for two centuries, when it was opposed by *Chau Tan Ki*, the fourth great author, whose practice was directed to attenuating and lowering the powers of nature.

The writings of Chinese authors on the different branches of medicine amount to many thousands of volumes, and some of them are very ancient. Their medical literature is not equaled in extent perhaps by that of any other nation. As a specimen the "Pan Trau," or Chinese Herald, may be named. It is a standard work on Materia Medica and Therapeutics, in forty octavo volumes, and contains a list of 756 other works from which it was compiled. Another work, in forty octavo volumes, is called the "Golden Mirror of Eminent Medical Authors," and was compiled by imperial authority.

There are no medical schools in China for the education of physicians. Those who wish to practice learn from private preceptors, and from books, the therapeutical means in common use. A Royal Medical College is maintained at Peking, the Imperial Capital. At the head of it is a president and two deputies, and it is composed of about one hundred members. It is no part of the object of the college to communicate instruction, but the duty of the members is to attend on the royal family and court, and to superintend the publication of medical books.

The number of physicians in China in proportion to the population is perhaps as great as in any other country, and they are divided, as in Europe and America, into regular and irregular. The study of the books which treat of the established methods of cure entitles a man to the standing which belongs to the regular profession. It is probable, however, that the great mass of those who practice are to be reckoned among the irregulars. Any one who chooses is at liberty to undertake the practice of medicine, but in the penal code of laws established by the present dynasty, malpractice is severely punished. The law is as follows :—

"An unskillful practitioner of medicine who gives drugs or performs acupuncture contrary to the established rules and practice, and thereby, though without any design to injure, kills the patient, shall be allowed to redeem himself from the punishment of homicide, but shall be obliged to quit his profession forever; if it shall appear, however, that he intentionally deviates from the established rules and practice, and aggravates the disease in order to extort more money for its cure, and the patient dies, the money shall be considered as stolen, and the medical practitioner shall be decapitated."

This law, like many others in more civilized countries, is seldom executed. The Chinese are entirely destitute of any correct knowledge of the structure of the human system and of the functions of its organs. There is some reason to suppose that, in ancient times, they possessed greater knowledge of anatomy than at present, but if such was the fact, it has been lost for many centuries.

In their medical books are diagrams and descriptions which exhibit the crude and erroneous notions entertained as to the structure of the human body and the relations of its various parts. It is a matter of astonishment that the comparative anatomy seen in the slaughter-house did not lead them a little nearer the truth; but our wonder at their ignorance will not be so great when we remember that dissection has never been practiced.

The following are some of the most absurd notions taught in their books on this subject: The larynx goes through the lungs to the heart; there are three tubes communicating from the heart to the spleen, liver, and kidneys; the spleen lies between the stomach and diaphragm, the food passing from it into the stomach, and thence by the pylorus into the large intestine.

They believe that the small intestines are connected with the heart, and the urine passes through them into the bladder, separating from the fæces at the caput coli; that the large intestines are connected with the lungs, and lie in the loins, having sixteen convolutions; that the skull, pelvis, arm, and leg, are each single bones. The soul is considered to reside in the liver, and courage in the gall-bladder. Many other instances in which truth and error are mingled, might be mentioned. But while the knowledge of internal parts is limited and imperfect, great attention has been paid to the surface of the body. Every square inch has its appropriate name, the location and relations of which, anatomically and therapeutically, form an important part of the physician's study.

The Chinese possessed a knowledge of the circulation of the blood in very ancient times. It seems, indeed, to have been received as an undisputed fact from time immemorial. Du Halde, a learned Catholic missionary and author of a History of China, published more than a century ago, says they seem to have known it since about 400 years after the deluge. In an ancient treatise on the pulse the circulation is spoken of as a thing about which there is no doubt, and the beating of the pulse is explained by attributing it to the motion of the blood in the vessels. The author reasons thus: "Everything that gives motion, thrusts forward some movable body, and everything that is moved, either gives place readily or makes resistance. Thus, as the blood and spirits are in continual motion, they strike against the vessels in which they are contained, and there must necessarily arise a beating of the pulse."

This extract is taken from a book at least 2000 years old, and others of a similar import might be made from both ancient and modern medical writings. There can be no doubt, therefore, that Chinese physicians have for ages been familiar with a fact, the discovery of which, in Europe, has given immortality to the name of Harvey. We are less surprised at this when we reflect that the art of printing, the mariner's compass, and the manufacture of gunpowder were known to the same people several centuries before they were discovered in Europe.

But while the fact of the circulation has been so long known to Chinese physicians, the most incorrect notions have been, and continue to be, entertained as to the course of the blood and the means by which it permeates every part of the body. It could not be otherwise where dissection was never practiced. The superstitious fears which enslave the minds of all idolaters have ever prevented the examination of man's frame-work after the spirit had taken its flight, and without this its wonderful construction would ever remain a mystery.

It is doubtful if the Chinese make any distinction between veins and arteries, but these are the tubes in which they consider the fluids to move. The action of the heart as a moving power is not clearly understood. In diagrams which illustrate the circulation, several tubes are seen to originate in each of the extremities, and the head, and passing to the thorax, some of them unite together, but they are not made to terminate in any central organ. The rapidity of the blood's movement is underrated, but they are about as near the truth on this point as were our own physiologists until very recently. They estimated that the blood makes two circuits every hour.

One of the most interesting facts connected with the history of Chinese medicine, is the extraordinary attention their physicians have given to the study of the pulse. A most wonderful and complicated system of examining the pulse has been developed and practiced for many centuries. By feeling the pulse alone they profess to tell the seat of a disease, its nature, and result. They profess to tell, also, the cause of a disease, its intensity, and, in fatal cases, how long it will be before death will take place. They profess to decide from the pulse if a woman is pregnant, to tell the stage of her pregnancy, and the sex of the fœtus.

The details of this theory and its unbounded pretensions may incline us to pronounce it all fanciful speculation, and such, no doubt, most of it is; but it cannot be doubted that Chinese physicians have acquired, by long experience, a great skill in judging of the ailments of patients by feeling the pulse. The universal confidence placed in this method, by the common people, is sufficient evidence of the fact. They always expect the pulse at both wrists to be examined, and if the foreign physician neglects this he loses one means of inspiring confidence.

This system dates back to a very early period. The treatise on the pulse already mentioned, is the most ancient, and is considered one of the best works on the subject extant. The author, *Wong Chau Ho*, lived under the *Tsin* dynasty, several centuries before Christ. He acknowledges his work to be a compilation, and divides the books he consulted into ancient and modern.

There are three points in each wrist where the pulse is to be felt, and at each of these points twenty-four varieties are noted, thus making in all 144 different kinds of pulse which the educated physician is expected nicely and accurately to distinguish.

To understand how it is Chinese physicians judge of disease by the pulse, it will be necessary to explain briefly their theories with reference to the sympathetic relations of the various parts of the body and the changes wrought in them by morbific causes.

They lay down two natural principles of life, viz., vital heat and radical moisture, of which the blood and the spirits are the vehicles. In all departments of philosophy they recognize two principles which they call the "*dual powers*," or the male and female principles of nature, the action and reaction of which give rise to all the phenomena observed in organic and inorganic nature, and it is these two principles which constitute the vital heat and radical moisture.

The body is divided into right and left parts, each of which has an eye, shoulder, arm, hand, leg, and foot. A second division is transverse, into high, middle, and lower parts; and a third into viscera and intestines. The radical moisture is lodged in the six viscera, the heart, spleen, and kidney, on the left; and the lung, liver, and kidney, on the right.

The vital heat resides in the six intestines, viz., the small intestines, gall-bladder, and ureter, on the left; and the large intestine, stomach, and ureter on the right.

It is from these organs that the heat and moisture are distributed by the blood and spirits over the whole body. This is accomplished by means of twelve canals, each one of which takes its origin from one of the twelve seats of heat and moisture.

A very close sympathy is believed to exist between the various internal organs, and each of these is considered to have an intimate relation to one of the five natural elements, earth, air, metals, water, and fire. Thus fire rules the heart; air, the liver and gall-bladder; water, the kidney; metals, the lungs; and earth, the spleen and stomach. The agreement or disagreement of these elements with the various organs deranges the circulation of heat and moisture, and gives rise to alterations and disease.

With this brief sketch of their theory of vitality and of the causes of disease, we will consider how it is they pretend to discover the seat and nature of disorders from the pulse. Each of the three points at the wrist where the pulse is felt is associated with some of the internal organs, and they believe that all the alterations of every part are manifested by corresponding changes in the appropriate pulse. In short, every internal part has its pulse, of which that at the wrist is the echo or representative.

To show how exceedingly complicated is this system of diagnosis and prognosis, it is only necessary to examine a list of the twenty-four varieties of pulse which are to be distinguished from each other at six different points (three in each wrist.) They are as follows:—

1. A floating pulse.
2. A deep pulse.
3. A slow pulse.
4. A quick pulse.
5. A slippery pulse.
6. A rough pulse.
7. A substantial pulse.
8. An empty pulse.
9. A vibrating pulse.
10. A failing pulse.
11. A rapid pulse.
12. A moderate pulse.
13. A large and broad pulse.
14. A small and minute pulse.
15. A long or protracted pulse.
16. A short pulse.
17. An impeded pulse.
18. A sudden or throbbing pulse.
19. A hidden pulse.
20. A moving pulse.
21. A strong pulse.
22. A weak pulse.
23. A hard pulse.
24. A contracted pulse.

It must be remembered that our language does not contain terms to express the nice distinctions which the corresponding terms convey to the Chinese physician.

To each of these twenty-four varieties of pulse are attached indications for each of the six points where it is felt, and it is from these that the scientific physician judges of the condition of internal organs. As an illustration take the seventeenth variety, which is the "impeded pulse."

The "impeded pulse" in the left wrist,
At 1st point, indicates sudden death.
" 2d " " weakness and perspiration.
" 3d " " exhaustion of the fluids.

The "impeded pulse" in the right wrist,
At 1st point, indicates failing of blood in veins.
" 2d " " water in the stomach.
" 3d " " life endangered.

In treatises on the pulse the most careful directions are given to enable one to arrive at a correct result from the examination of the varieties of the pulse as above explained. Practitioners are also minutely informed as to the modifications of each variety arising from age, sex, habits of life, season of the year, etc. etc. The resemblances and differences of the various kinds of pulse are in like manner carefully pointed out, and physicians are instructed not to confound them, to the great injury of the patient.

An ancient author manifests a commendable zeal for the reputation of his art, and discourses on the subject thus:—"It is necessary to apply one's self diligently to understand the properties of the pulse and to draw the proper consequences, after which, with a sufficient knowledge of drugs, the cure of disease may be undertaken."

Seven cautions are given to a physician about to feel the pulse:—

"1st. He must be in a calm disposition of mind.

"2d. He must be as attentive as possible, laying aside even the smallest disorder or absence of the mind.

"3d. With respect to his body, he should be in a state of tranquillity, and his respiration ought to be free and regular.

"4th. He should, after he has laid his finger softly and touched lightly the skin at the proper places, examine that which regards the six seats of vital heat, viz., the small intestines, gall-bladder, large intestines, etc.

"5th. This done, let him lay on his fingers more hard, moderately pressing the flesh, to examine how the pulse is which is called the pulse of the stomach.

"6th. Then let him press so hard as to feel the bone, and let him examine what relates to the seats of radical moisture, or the heart, liver, stomach, lungs, and kidneys.

"7th. Let him examine the quickness and slowness of the pulse, to see if the number of beats is more or less than it ought to be in the space of one respiration."

It will readily be perceived from the above that this system of examining the pulse is exceedingly complicated, and one which would require long and persevering study to master.

Whatever may be thought of the theories upon which it is founded, we must give the ancient Chinese physicians the credit of being most persevering observers, and although we may reject both their theories and the indications pointed out in their system, yet we can readily conceive how it is possible for one long accustomed to this mode of observation to become very skillful in pointing out the phenomena which are developed in the course of diseased action.

Barrow, in his Travels in China, relates that he was once attacked with cholera morbus, from eating unripe fruit. The Governor of the city, on being applied to for some opium and rhubarb, sent, instead, one of his physicians. "With a countenance as grave and a solemnity as settled as was ever exhibited in a consultation over a doubtful case in London or Edinburgh, he fixed his eyes on the ceiling, while he held my hand, beginning at the wrist and proceeding toward the bend of the elbow, pressing sometimes hard with one finger, and then lightly with another, as if he were running over the keys of a harpsichord. This performance continued for about ten minutes, when he pronounced my complaint to have arisen from eating something that disagreed with my stomach."

Having reviewed thus briefly the theories entertained by our Celestial brethren, let us inquire what is the actual state of the practice of medicine among them. On this subject much remains for us to learn, and our information must continue to be limited and indefinite until foreign physicians, thoroughly conversant with the language, shall come into closer contact with native practitioners, and thus enjoy better opportunities of witnessing the methods of treatment they pursue, and of noting the results.

It is difficult to say whether their practice is influenced more by prevailing theories or by knowledge which has been gained from long experience. Both produce their effects on the mind of the practitioner, and the consequence is that we find a strange mixture of inert and powerful medicines applied in rational and fanciful methods for the removal of disease.

In the treatment of disorders caused by cold or attended with chills, he ating andstimulating medicines are employed, and in febrile affections, medicines supposed to possess refrigerating and sedative properties are used. While they possess medicines having positive virtue, yet there are instances where they rival our homœpathic friends in the exercise of faith. In the winter of 1856 the thermometer fell below the freezing point, (something very uncommon,) one night, at Canton. In the morning an unusual activity was noticed in the streets, and it was found to be caused by people hurrying to the shops to sell ice they had gathered, which was to be bottled for use as a cooling medicine during the summer.

Cathartics, emetics, counter-irritants, and caustics are extensively employed, according to directions which are very minutely detailed in their books. The moxa is also much used, and another favorite and effectual method of counter-irritation is to scrape the skin with a copper coin, or to pinch it many times between two of the coins, until it becomes of a deep livid hue.

Incantations, charms, amulets, astrology, lucky and unlucky days, have an important part to play in most cases of disease. Idols must often be consulted, to decide what doctor shall be called, and various ceremonies must be performed to drive away the evil spirit which is supposed to have taken possession of the sick person. These ceremonies are not of a character to be congenial to the nerves of one prostrated with disease, for an important part of them consists in furiously beating a gong and exploding fire-crackers by the hundred. Another method, more innocent, and possessing a virtue to be ranked with a course of Hahnemann's globules, consists in writing, with red ink, the word which means to dissipate or scatter on the skin over a part where a pain is seated.

The medicines which are used are derived from all departments of nature. In a standard work on Materia Medica and Therapeutics, four hundred and forty-two articles are enumerated and described. They are classified according to their derivation from the animal, vegetable, or mineral kingdoms. Three hundred and fourteen are from the vegetable, fifty from the mineral, and seventy-eight from the animal kingdom.

Many of the articles they use are officinal with us, but the Chinese pharmacopœia stands alone in recognizing the following, which are given as specimens of what are peculiar to themselves:—paws of the bear and monkey, tigers' bones, dried crabs and lizards, dried snake-skins, liver, heart, and marrow of the horse and mule, various parts of the hog and dog, placenta of several animals, dried silk-worms, bear's gall, elephant's skin, etc

The Chinese have long been familiar with the powers of arsenic as an antiperiodic, and they treat syphilis with a preparation made by subliming together mercury and arsenic.

In the compounding of medicines, the utmost attention is directed to be given to several points. The following extract will give the views of writers on this subject:—"Medicines are distinguished into seven sorts; there are simples, which are not joined to any other, and there are compound. Among the latter are those which ought not to be separated from each other, but require to be always together. There are some which lend each other mutual assistance, while between others there is a great antipathy. Great care must be taken in mixing these sorts of medicines. The best way will be to make use of such remedies as cannot exist without each other, and of those which lend mutual assistance. But take great care in using those which have an antipathy among themselves, and which are of a contrary nature. Those that have a malignant or venomous quality may be used, provided they are joined with such as have virtue to subdue this malignity."

Their knowledge of the properties of particular articles seems to be limited, owing, no doubt, to the practice of combining together a great number of ingredients in a single preparation, so that the proper effects of any one of them cannot be known.

Secret remedies are prepared and sold in great abundance, as patent medicines are in the United States. Placards and advertisements are put up at the corners of the streets and in public places, announcing in unmeasured terms the infallible virtues of the nostrum. Jayne, Brandreth, Holloway, and their associates, might learn a profitable lesson if they would study the vocabulary of Chinese quacks. A common mode of winding up an advertisement is to assure the happy consumer of the never-failing pills or powders that "eternally the disease will not return." Some of these nostrums are sold at enormously high prices. Certain pills, for instance, are worth one dollar each. When a high price is paid, the sufferer feels a greater assurance that he is taking a medicine unadulterated with inferior or worthless ingredients.

Considering the great multitude of physicians, and the numerous remedial agents they possess, it must be that centuries of experience have taught them many useful and effectual modes of treating disease. The high estimation in which physicians are held and the great quantity of medicines consumed, are evidences that such must be the case. The proverb says, "A good physician is a public benefactor;" and an eminent physician is called the "*arm of his country*." The trade in medicines is one of the most important and profitable branches of business. In the large cities, streets are taken up with drug-stores neatly arranged with drawers and jars labeled in the most approved manner. A very noticeable point of difference from our own drug-shops is the absence of glass bottles. Porcelain jars and demijohns take their place. The study of medicinal agents used by the Chinese, and their application of them to the cure of disease, offer very wide fields of investigation to those who have the opportunity to cultivate them.

It is a very curious fact that the practice of surgery is almost entirely unknown to the Chinese. It seems impossible to explain how this could be in a nation where physicians have always been so numerous and so honorable, and where the experience of centuries has been handed down from generation to generation in learned treatises. Whatever may be the reason, it is, nevertheless, a fact, that in all the Empire of China there is not a native surgeon (except a few educated by foreigners,) capable of performing the simplest operation requiring the use of the knife. They possess no surgical instruments. The treatment of fractures and dislocations is not understood. Teeth cannot be extracted until they become loose enough to be removed with the fingers. All diseases and injuries requiring surgical interference, are beyond the reach of the whole native faculty. Foreign physicians who have cured cataract, removed tumors, performed lithotomy, and amputated limbs, are compared to the gods and to physicians of fabulous tradition, and the most extravagant estimate is often placed upon their skill and ability to remove incurable diseases.

The department of midwifery has from time immemorial, and continues to be, exclusively in the hands of females. Native females of respectability lift up their hands in horror and amazement at the idea of having male attendants.

An American lady, long a resident of China and perfectly conversant with the language, says she has often been ashamed to answer their questions upon this point. This is, doubtless, one reason why they look upon foreigners as barbarians, uncivilized, and ignorant of the proprieties of life.

It may, perhaps, be of some interest to the profession to know how lying-in women are treated in the Celestial Empire. The immense number of births which occur annually would seem to render it of the utmost importance that the true principles of the obstetric art should be well understood, and the more so, because the iron rule of custom, by interfering with the growth of the feet, compels the majority of the mothers of China to lead a sedentary life.

It will be seen that the practice of Chinese midwives is the very opposite, in many things, of what we are taught by our distinguished professors in this department. We would, therefore, naturally expect the most disastrous results from what, in America, would be pronounced malpractice. But there is no evidence that those results do follow. On the contrary, so far as I have been able to learn from good sources of information, less of evil is apprehended in their confinements than with us, even when the best obstetrical aid is at hand. Various causes may be assigned for this, one of the principal of which is that they naturally suffer less and have easier deliveries than our own females; but when we consider the luxurious and sedentary habits of many of the people, and the wonderful change which takes place in the most favorable cases of delivery, we will be at a loss to understand how so many escape with so little damage from the ignorance of the professional attendant.

When labor comes on, the midwife is sent for, and the patient sits on a little stool which is placed inside of a low tub. They think it astonishing that any woman can be so uncleanly as to remain in bed. An assistant supports the patient's back and she is always delivered sitting up. It is only in very severe cases that a patient is permitted to lie down. Sometimes they walk about to assist the pains. Medicines are given to expedite delivery, and nearly every woman takes a "hastening pill" at the commencement of labor. The umbilical cord is cut with scissors or a piece of broken porcelain, and is done up in rice flour. The placenta is allowed to come away of itself; but if it is long in doing so, the patient's throat is tickled with a feather and the effort of gagging forces the after-birth away.

After the birth of the child the mother is permitted to lie down a little while, but, as a general thing, she sits up nearly all the time, reclining, perhaps, a little the second day. She is supposed to be able to go about on the third morning, and does so. The poorer classes do not lie down at all, but go about their usual work as soon as the labor is over. Among the wealthy they do not lie in bed, but keep their rooms for one month, being unclean, as they say, and no one is permitted to enter, except those in attendance and very near female relatives. At the end of the month the mother purifies herself, dresses up and comes out to a great feast, on which occasion the child is named, and its head, if a boy, is shaved for the first time by a barber.

Pregnant women continue to eat their usual food up to the time of confinement, but they look forward to this as a time for good eating, and make preparations accordingly. A favorite article is pickled ginger-root. Twenty or thirty pounds of fresh ginger are fried in oil and then boiled in vinegar until they are thoroughly cooked. Very soon after the labor is over, the mother partakes of rice and pickled ginger, with hard boiled eggs, which have also been prepared beforehand. After the second day, if there is no fever, she is allowed chicken, pork, fish, fruit, and whatever she fancies; but everything she takes during the month must be cooked in vinegar and spirits.

As soon as the child is born, it is wiped with soft paper and wrapped up in old clothes of any kind; but it is not washed until the third morning. It is fed with soft-boiled rice immediately after birth, and continues to have two meals of this per day.

No instruments of any kind are used to assist the labor, but to what extent the midwife uses manual interference, I am not informed. It is doubtless a blessing that no one has invented obstetrical instruments for them, while they are so profoundly ignorant of the anatomy of the pelvis and of the mechanism of labor.

The above is an outline of the practice pursued, not in a small community among a few individuals, but throughout the most densely populated empire on the face of the earth. When we contrast it with the rules of action we are accustomed to observe, we are filled with astonishment at the immunity of Chinese females from the calamities incident to the critical period of childbirth. We can only conclude that nature does her work well for them in spite of all difficulties.

MISSION HOSPITALS.

The first attempt to give the Chinese the benefit of modern medical science, was made by Dr. Alexander Pearson, a surgeon in the service of the East India Company. While residing in Canton and Macao, he undertook the introduction of vaccination among the Chinese. His first efforts were made in 1805, and they were continued for many years, with untiring zeal, amid many difficulties and discouragements, but were at last crowned with success. The prejudices of an ignorant people were overcome, and they were placed in possession of a safeguard against a loathsome pestilence which for centuries had been an annual epidemic.

Dr. Pearson's first report to the National Vaccine establishment was made in 1816, after eleven years of successful labor in his undertaking. He continued to superintend the practice among the natives whom he had instructed, until 1832, or as long as he remained in China. At this time the practice is still kept up in the City of Canton, and many enjoy the exemption secured by vaccination; but for obvious reasons it is not universal, and smallpox annually numbers many victims.

The name of Pearson will long stand on the records of our profession, scarcely less honorable than that of Jenner, a bright example to allure others to like labors of benevolence and charity.

The first hospital for the Chinese was opened by Dr. T. R. Colledge, also a physician in the service of the East India Company. I give in his own words the account of its origin. "In the year 1827, on joining the East India Company's establishment, I determined to devote a large portion of my time, and such medical skill as education and much attention to the duties of my profession had made my own, to the cure of so many poor Chinese sufferers of Macao and its vicinity as came in my way. During that year my own funds supplied the necessary outlay. * * * In 1828, many friends who had witnessed the success of my exertions in the preceding year, came forward to aid in the support of a more regular infirmary which I proposed to establish, and put me in possession of the means to provide for the maintenance of such patients as I found it necessary to keep for some time under my care." In 1832, 4000 Chinese had received medical aid at the hands of Dr. Colledge.

Some of those who had received benefit from treatment, presented written acknowledgments to the physician. The following is a translation of one of the papers presented to Dr. Colledge, and is a specimen of the style in which the Chinese lavish thanks upon the foreign physician:—"While thus extending wide your benevolence, your fame spread over the four seas. I heard thereof, and came, and was happily taken under your care, and not many months passed ere my eyes became bright as the moon and stars when the clouds are rolled away. * * * Now completely cured, and about to return home, I know not when I shall be able to requite your favors and kindness. But, sir, it is the desire of my heart that you may enjoy nobility and emoluments of office, with honor and glory, happiness and felicity that shall daily increase, riches that shall multiply and flourish like the shoots of the bamboo in spring-time, and like that, shall be prolonged ten thousand years. Deeply sensible of your acts of kindness, I have written a few rustic lines which I present with profound respect."

Dr. Colledge's hospital was closed in 1832, on account of the increasing duties of his station, but he continued to manifest great interest in every effort to extend to the Chinese the benefits of scientific medicine and surgery, and his name still stands as President of the Medical Missionary Society.

A Dispensary was opened in 1828 at the City of Canton, by physicians residing there, and much good was done in affording aid and relief to the suffering; but it was not until 1835 that a permanent hospital was established. In that year the Rev. Dr. P. Parker, sent out by the American Board of Foreign Missions, arrived at Canton. Encouraged by the success of Drs. Pearson, Colledge, and others, he rented a building of Howqua, the senior Hong merchant, and commenced receiving patients in November. It was supposed that from so dense a population, one class of cases would afford as many patients as could be treated, and diseases of the eye were selected as the most common and most amenable to treatment. The necessity of the case, however, soon required the admission of other affections, and it became at once a general hospital. At the end of the first year, 2152 patients had been received and treated. The interest of the foreign community in the hospital was manifested by a subscription of $1800 for its support. Dr. Parker continued his labors with increasing success until they were interrupted, in 1840, by the war with England. During the continuance of this, he visited this country and Europe, and much interest was manifested wherever he went, in his statements with reference to medical labors in connection with foreign missions.

The foreign community having witnessed the success which attended the medical labors of Dr. Parker and other physicians, took measures to place on a permanent basis some plan by which these efforts could be sustained. For this purpose, a society was instituted in 1838, called the Medical Missionary Society in China. At the meeting for the formation of this society its object was set forth in the following resolution, viz., "That in order to give a wider extension and a permanency to the efforts that have already been made to spread the benefits of rational medicine and surgery among the Chinese, a society be organized at Canton, under the name of the Medical Missionary Society in China; that the object of this society be to encourage gentlemen of the medical profession to come and practice gratuitously among the Chinese, by affording the usual aid of hospitals, medicine, and attendants, but that the support and remuneration of such medical gentlemen be not at present within its contemplation."

The operations of the Society at Canton and Macao were suspended by the breaking out of hostilities two years after its formtion, but at the re-establishment of peace they were extended to Hong-Kong and some of the new ports which were opened to foreigners by the treaty of Nankin. Under its patronage, hospitals and dispensaries have been established and conducted by physicians connected with various missionary societies in the United States, England, and Continental Europe, and through their labors much has been done to break down that prejudice and arrogant exclusiveness which have ever been the greatest barriers to commercial intercourse and to the introduction of Christianity and science among this wonderful people.

It would be out of place here to give a detailed history of the several hospitals which have been established for the benefit of the Chinese. It will be sufficient to refer to the statistics of the principal ones.

Dr. Benjamin Hobson has been in China since 1839, under the patronage of the London Missionary Society. He has had charge of hospitals, first in Macao and Hong-Kong, and afterwards in Canton. Up to the time of the recent hostilities, not less than 150,000 patients had been treated by him at these places.

At Shanghai a hospital was opened in 1844, by Dr. Lockhart, formerly of Liverpool, who has conducted it with great success up to the present time. I have the statistics of only six years, but during this period 61,201 patients are reported.

The Ophthalmic Hospital of Canton, as already mentioned, was opened in 1835, by Rev. Dr. Parker, who conducted it for eighteen years, during which time the number of patients treated was 53,062. In 1855 the hospital passed into my hands. During two years the number of patients daily received there and at a dispensary, which I conducted at the same time, was from 100 to 170. Both these places were destroyed at the beginning of the recent war with England.

Hospitals and dispensaries have been conducted at Amoy, Fuchau, and Ningpo, on a smaller scale, but with very beneficial results.

The physicians who have had charge of these hospitals have all been sent out by missionary societies in Europe and America, and at all of them the patients have received religious instruction by lectures and the distribution of tracts and portions of the Sacred Scriptures. It has been a primary object in the gratuitous practice of the healing art, to prepare the way for the overthrow of idolatry and superstition, and the introduction of Christianity with all its attendant blessings.

In addition to the appropriate labors of hospital practice, several native young men have received instruction in the principles and practice of our art. One of these, educated by Dr. Parker, and connected with the Ophthalmic Hospital until its recent destruction, has attained to a very respectable standing as a surgeon. He has operated for cataract more than a thousand times, has exsected a great many tumors of various descriptions, and he only needs an acquaintance with practical anatomy to qualify him for the more delicate and dangerous operations. It is to be hoped that the time is not far distant when medical schools will be established which will afford to the young men of the Celestial Empire all the advantages which are now so abundant in Europe and America.

In concluding this imperfect sketch of native and foreign medicine in China, I desire to call the attention of the younger members of our noble profession to the wide field which invites them beyond the borders of their native land. There are some, no doubt, who have chosen the profession of medicine, not as a mercenary trade, but because it affords them so many opportunities for exercising the virtues of benevolence and charity. There may be some who value life and professional attainments only in proportion to the good they are able to do in the use of them. Upon such I would impress the duty of considering the wants of the human family in the Eastern world. There, ignorance, superstition, and idolatry reign supreme, shutting out the benefits which Christianity and modern science have conferred upon the nations of the West.

We congratulate ourselves, and justly, on the wonderful improvements which have recently been made in all departments of medical science. Common philanthropy should inspire us with a desire to extend to all our race that knowledge which enables us to confer so many benefits upon our friends and neighbors. A work which humanity demands of us is the transfer of our knowledge into the Chinese language. It would be worth the labor of a lifetime to any man to give to the physicians of three hundred millions of people such a book as *Wilson's Anatomy.* Who can estimate the good that would result from translations of standard works in each department? A beginning has been made in this work of philanthropy, and the honor of it belongs to Dr. Benjamin Hobson, who has published an Epitome of Anatomy and Physiology, in the Chinese language.

Those who have the light of truth must go forth and dispel this darkness which hovers over the Eastern world. None possess so many advantages for taking the lead in this glorious work as the ardent, pious, and self-denying physician. His skill gains for him access among barbarians, where others cannot go. His disinterested benevolence gives him power and influence, which no others can attain. His daily ministrations to the poor, the lame, the halt, and the blind, are convincing proofs to the most ignorant and prejudiced that no sinister motives influenced his conduct. With such elements of power for good, and with such boundless demands for the exercise of them, our profession will be false to its own honor, false to humanity, and deaf to the wants of suffering millions, if there are none found to go forth and exercise their art where untold benefits will follow their footsteps.

ART. III.—*Exsection of the Sciatic Nerve for Neuralgia of the Stump following Amputation of the Thigh.* By GEO. C. BLACKMAN, M.D., Professor of Surgery in the Medical College of Ohio; Surgeon to the Commercial Hospital.

ON the 7th of April last I received, from a physician of Preble County, a letter detailing briefly the sufferings of a sister who had been subjected to three amputations. From the above letter I make the following extract:—

"She has already had three amputations performed, and still suffers as much, if not more than ever. She first began to suffer in the year 1847. Thinks the pain was brought on by cold. Before the first amputation it felt as if suppuration was about to take place; was swollen to some extent, and was constantly cold from the knee to the foot. It was amputated about three years after the commencement of her sufferings. The synovial membrane and articular cartilage were found diseased. No benefit was derived from the first operation, which was performed just above the knee.

"The second amputation was done five months after the first. The pain did not cease for about a year, after which there was no return for five years. Third amputation was performed in October, 1856, and no relief followed. The pain is now (April 5th) the same as before the first amputation. It is not equally severe at all times. It is seated in the end of the stump, which is very painful when touched. She describes it as an aching pain; a sensation of drawing as if something were pressing tightly over the end of the bone. She has tried all, or nearly all, remedies in the Materia Medica, and none have given even temporary relief."

I visited this patient on the 15th of April, and found a lady about thirty-five years of age, with a countenance indicative of protracted suffering. Her menses were regular, and notwithstanding her great suffering she was but little emaciated. In view of the obstinacy of the case, after the faithful trial of numerous remedies, I concluded to try exsection of the great sciatic nerve. Assisted by Dr. Sloat, of Morning Sun, Ohio, and Drs. Red and Goodrich, of Oxford, I made my incision so as to expose the nerve as it passes between the great trochanter of the femur and the tuberosity of the ischium. I then removed an inch and a half of the trunk of the great sciatic, and as the small sciatic nerve passed directly over it, a portion of the latter was also included. The patient soon rallied from the effects of the chloroform, and could bear any amount of pressure on the end of the stump, when, before the operation, the contact even of the bed-covering, would throw the limb into spasm and produce the most excruciating pain. On the 19th of April her brother wrote me as follows: "My sister is still doing well. Appetite slowly improving. Rests very well at night; has passed two nights without morphia. There is no pain at the end of the stump, and no drawing sensation; but complains of some pain higher, in the vicinity of the wound."

A plaster of belladonna and opium was applied to the spine, and quinine and iron administered internally. The wound was slow in healing, and for five weeks she was confined to her bed. On the 19th of May she told the family physician, Dr. Sloan, that she was more free from pain than she had been for eight years. On the 1st of August I received a visit from her brother, from whom I learned that my patient was able to walk or ride, and that although not perfectly cured, her condition was far more comfortable than it had been for years. Her general health was excellent.

ART. IV.—*Proceedings of the Pathological Society of Philadelphia.*

WEDNESDAY EVENING, December 8th, 1858.

The President, DR. LA ROCHE, in the Chair.

Wounds of the Heart.—DR. DA COSTA exhibited a specimen of a wound of the heart, and read the history of another, for which he expressed his indebtedness to Dr. S. P. Brown.

CASE I.—A boy, aged eleven, while running about the fields with another boy shot himself. He was immediately conveyed to his home, not far distant, and lived, although the ball had entered directly over the heart and perforated the lung, for three hours after the accident. During this time he spoke repeatedly, and completely exonerated his companion from any blame.

On post-mortem examination the ball was found to have struck the right ventricle near the origin of the pulmonary artery, then to have glanced off to the artery, and from there to have touched several places in the left lung, passing out between the fifth and sixth ribs in the axilla. The pericardium was wounded, and contained some fluid blood. There was also some in the pleura.

CASE II.—An Irishman, Peter Conway, received two stabs in a fight, in which he endeavored to separate the combatants. It was not noticed at the time by the by-standers, although he was observed to have suddenly grown faint. He did not speak after being stabbed; he became exceedingly faint, was placed in bed, and remained quiet until his death, which occurred three hours after the injury. The wound in front was at the lower end of the ensiform cartilage, about an inch from the median line on the left side. The wound on the back was three inches from the spinous process, passing between the ninth and tenth ribs. The wounds had been inflicted with an instrument about five-eighths of an inch in breadth.

On post-mortem examination, six hours after death, it was found that the knife had passed through the pericardium, and into the lower part of the right ventricle, occasioning a horizontal cut, through which a scalpel-handle could be passed into the ventricle. The direction of the wound on the back was diagonal, and had probably cut the intercostal artery. It had passed through the pleura, but had not reached the lung. The pleura contained about six pounds of fluid blood, the pericardium none. All the other viscera were healthy.

DRS. GROSS, LA ROCHE, and HALL, each cited cases in which the heart had probably been wounded without immediate death resulting. In the case referred to by Dr. Hall, a large butcher's hook had entered deeply immediately over the region of the heart, and must from its direction have perforated the pericardium, and touched the heart. The patient recovered.

DR. ADDINELL HEWSON remarked that although the two specimens exhibited by Dr. Da Costa were exceedingly interesting, they were, as probably most of the members must be aware, far from being unique in their character. He had had occasion to investigate the subject very recently, and could cite many cases even more curious. Thus in Dupuytren's Essays could be found a number of such, including the famous case of the Duc de Berri, who was stabbed while leaving the opera by a man who stood behind him. The dagger was left sticking in the Duke's breast, and he himself drew it out, after he had been removed from the scene of the assault. Although the wound traversed the right auricle it did not prove fatal for several hours after its reception.

Thomas Bartholin mentions (Hist. Anat. Rar. Cent. 1, Hist. 77,) the case of a young man stabbed with a knife, in which the patient afterwards walked home some distance, and lived five days. Post-mortem examination revealed a small oblique wound of the right ventricle.

There are a number of cases on record in which persons have had the heart transfixed or penetrated with a stilet or darning-needle, and have entirely recovered. But perhaps the most extraordinary case on record is that reported to the Medical Association of the State of Alabama, by Dr. Chas. E. Lavender, of Selma, in 1850. It was in a student of medicine, aged nineteen years, who had been stabbed by a fellow-student; and from the account given by the Doctor, there can scarcely be any doubt that the knife penetrated the heart, (probably the right ventricle.) The patient lost over a gallon of blood, and recovered after an interval of twenty days' confinement. This extraordinary case is very fully quoted by Dr. Eve in his "Remarkable Cases in Surgery."

The direction of the lesion of the great central organ of the circulation in these and similar cases, was probably such as to separate, rather than divide the greatest part of the muscular fibres composing the wall at the wounded point, and hence probably the gaping was but slight, as has been pointed out by Dupuytren. This, no doubt, is also the reason why more cases have recovered from stabs, and penetrating wounds of the heart, from cutting instruments, than from injuries of a similar kind from gunshots. There are cases on record where shots have penetrated the cavities of the heart and yet death did not immediately follow. Dr. Randall, of Tennessee, has reported such a case, in a boy of fifteen years of age, who was accidentally shot by a fowling-piece, and survived the accident sixty-seven days. Three shot were found, after death, *lying loose* in the cavity of the ventricle, and two in the right auricle. The shot had entered the heart about one-third of the way from its base to its apex; the wounds made by them were at a little distance from each other; they had all cicatrized, but the spots were plainly to be seen. (See *American Journal of the Medical Sciences* for 1829.) But the most incomprehensible case of all is that mentioned by Dr. A. Christison in the *Edinburgh Monthly.* (Ranking's Abst., 1853.) In this case a musket-ball was found in the left ventricle, covered with lymph, without any traces of wound of the heart that could be discovered. The man, a soldier, had been shot some time previous by a musket-ball in the left shoulder. On dissection the course of the ball could not be traced among the textures of the shoulder, but could between the second and third ribs; it passed obliquely through a narrow canal with cartilaginous sides, and then through the costal pleura. A large abscess occupied the cavity of the pleura, except superiorly where there was air. The lung was very much condensed and pressed toward the heart; an opening in its pleural covering showed the continuation of the course of the ball, and this was traced onward as far as the root of the lung, where they failed to trace it farther. Dr. Christison thinks that the ball could only have found its way into the ventricle by one of the pulmonary veins.

Incised Wounds of the Intestine.—DR. LENOX HODGE presented a specimen of wound of the intestine.

H. W., a colored man, was brought to the Pennsylvania Hospital on the evening of Friday, November 26th, with an incised wound of the abdomen. The wound was about three-fourths of an inch long, and situated half way between the umbilicus and pubes, and about one and a half inches to the left of the median line. During the twenty-four hours that he survived, he complained of pain throughout his abdomen, and vomited constantly. On Saturday emphysema appeared, and extended as high as the nipple on the left side, and nearly as high on the right; passed down as far as Poupart's ligament, and distended the scrotum to its utmost.

The post-mortem examination showed the peritoneal cavity to be filled with fæcal fluid and gas, and the small intestines to be wounded in three places. These wounds of the intestines were situated in the ileum; the lowest was about six inches above the ileo-cæcal valve, the other two were close together and about six inches higher up. Each of them penetrated through all the coats of the intestines; was about half an inch in length, and perpendicular to the course of the canal. They beautifully show the effort that nature makes in such cases, to close the wounds, by bringing the edges together, and everting the mucous membrane.

In the course of a discussion of the various treatments pursued in intestinal wounds, DR. GROSS stated, that he invariably adhered to the practice of promptly returning the omentum, and sewing up the external wound, so as to prevent hernia, which he believed would be an inevitable consequence unless stitches were employed. The external wound will not unite without them.

DR. EDWARD HARTSHORNE referred to a case, published at length in the tenth volume of the *Medical Examiner*, in which, although no stitches had been used, a perfect union of the abdominal walls had taken place within ten days after the accident. The patient's death was caused by internal strangulation; a loop of the intestine was so bound down by bands, the result of the previous inflammation, as to have produced an obstruction of the passage. The wound was found, after death, to have entirely healed; the recti muscles were well united.

Tubercular Meningitis; Concentric Hypertrophy of the Heart.—DR. ALBERT H. SMITH presented specimens of tubercular meningitis, and of concentric cardiac hypertrophy.

William Anderson, aged forty-seven, colored, native of Philadelphia, stevedore, entered the hospital, on the 30th of November, 1858. He had always had excellent health until three weeks previous to his admission, when he was attacked with pains through his limbs and back, general malaise, loss of appetite, and constipation. These symptoms were soon followed by a chill, accompanied with a violent throbbing pain in the head, which continued without abatement until the patient applied for admission. Beyond this, nothing definite can be said of his history; he had no convulsions, nor at any time loss of consciousness or power, or impairment of the special senses.

When he presented himself, he was of full habit; not emaciated; he was sitting with his legs upon a settee, body bent forward, and head thrown slightly backward, which position, he mentioned, was the most comfortable he could assume; the expression of his face was one of extreme misery. Upon being questioned, he answered quite coherently, though with the short hurried manner of one in great pain. His pulse was full, though compressible, quite regular, sixty per minute; tongue thickly coated with white fur; mouth dry; respiration natural; skin dry, but not hot. He had abdominal tympanitis, with slight tenderness on pressure over the whole region; his bowels had been quite loose for three days. His pupils were contracted to a point, and insensible to light. Vision scarcely impaired; all other senses perfect. The most prominent symptom was the violent throbbing pain through the head, which was constant, and without remission. To use his own expression, "the misery in his head almost drove him crazy." He was greatly debilitated, having been carried to the hospital. There was no abnormal condition of either the heart or lungs apparent from physical signs.

He continued in this state, without any change, for four days, when his symptoms became more alarming. His pulse was more frequent, weaker, and smaller; skin cooler and moist. He grew very restless, with occasional maniacal jactitation, at times jumping out of bed, calling upon persons for help whom he imagined around him. His sensibility and consciousness diminished, and a partial delirium set in; though upon addressing him in a loud voice, he would give a coherent and rational answer. His head, previously drawn back voluntarily, because it afforded him some relief, was now rigidly fixed almost at a right angle to the normal axis of the neck; his pupils were still obstinately contracted; there was slight convergent strabismus. Involuntary urination occurred, but no action of the bowels except by injection. There was no apparent affection of the lungs or heart. These symptoms continued with increasing violence until the eighth of December, when he sank under the exhaustion, and died eight days after admission. There was no paralysis, nor muscular rigidity, except that mentioned of the neck.

Autopsy.—Encephalon: Dura matter greatly congested; arachnoid cavity containing about six ounces of clear serum; arachnoid inflamed, opake, and thickened, with slight deposit of miliary tubercle on the superior surface of the posterior lobes along each side of the longitudinal fissure; none that could be discovered at the base of the brain; pia mater violently injected over its whole surface; substance of brain firm and healthy in appearance; lateral ventricles containing some effusion, rather more than the normal amount; choroid plexuses congested. Thorax: Pleuræ free from effusion or adhesions; pulmonary surface studded with miliary tubercles; costal surface entirely free from them. The whole substance of both lungs was completely filled with the same deposit. The heart was small, about two-thirds the normal size; on opening it, the walls of the left ventricle were found to be concentrically hypertrophied, being, at the middle, ten lines in thickness, and reducing the cavity of the ventricle to the capacity of from six to eight fluidrachms; there was no other abnormal condition of this organ, nor of the great vessels. Abdomen: Peritoneum free from tubercular deposit; liver large and fatty; spleen filled with the miliary tubercles through its substance; none on its surface; all the other viscera perfectly healthy.

To be certain that the heart was not in a state of post-mortem contraction it was kept for several days, and attempts were made to dilate it with the finger, but it underwent no change.

WEDNESDAY EVENING, December 22d, 1858.

The President, DR. LA ROCHE, in the Chair.

Tumor of the Breast.—DR. S. W. GROSS presented a tumor removed by Professor Gross, from the left breast of a woman forty-three years of age, at the Clinic of the Jefferson Medical College. She is the mother of seven children, having been confined, for the last time, five years ago. Her menstrual functions are performed regularly. About seven years since, she first noticed a small, hard, inelastic lump in the upper part of the breast, which did not give rise to any inconvenience up to the middle of last summer, a period of six and a half years; it had increased to about one-half its present size, that of a large fist, when she began to feel sharp pains shooting through the tumor, which caused her a good deal of suffering. There was no enlargement of the subcutaneous veins, no lymphatic involvement, nor was the nipple retracted. The diagnosis was that of a fibrous tumor. The woman made a good recovery, the wound having united by the first intention. The structure of the tumor looked very much like that of the udder of a cow.

Dr. Packard, under the microscope, (magnified 472 diameters,) detected—

1. Portions of lactiferous tubes, lined with epithelium in some portions of their extent, and at others showing merely the tube of basement membrane.
2. Fibrous tissue.
3. Fibro-plastic cells, in not very great abundance.

Aneurism of the Subclavian Artery, Injected with Perchloride of Iron.—DR. FORBES, in exhibiting this specimen, remarked as follows:—

William Brunte, aged thirty-six, was a native of Germany, and a farmer by occupation. While working in hay with a pitchfork, on the twenty-eighth of August last, he felt something give way about his shoulder-joint on the right side. He had pain throughout the entire extremity of that side, which, after a few hours, localized itself under the middle of the collar-bone. A pulsatory tumor made its appearance over the middle of the clavicle, and on the twelfth of September he left the farm, and came to this city for counsel. His surgeon pronounced it to be an aneurism, and advised that no time should be lost in seeking further aid in view of an operation, as the tumor was now as large as a hen's egg, and increasing rapidly in size. Upon further consultation, it was concluded not to operate. The tumor grew rapidly, and ten days after his arrival in the city, he sought the advice of a German physician, who proposed to him the injecting of perchloride of iron into the tumor as his only hope. This operation was accordingly performed; three distinct openings were made near the summit of the tumor, but what quantity of the perchloride of iron was injected I could not ascertain; nor could I learn what amount of hemorrhage occurred when these openings were made. Ten days after the operation of injecting was performed, the surgeon ceased his attendance, and on the following day the patient sent for Dr. Freeman, of this city, who, after repeated solicitations, and after being well assured that the German physician had ceased to attend, concluded to visit him.

The tumor was found to be larger than an ostrich egg above the clavicle, the margins of the three openings made for the purpose of injecting the perchloride of iron, were sloughing; there was no pulsation in any of the vessels of the limb; still it was warm, œdematous, and entirely deprived of sensation. The patient was quite anæmic from the hemorrhages which had occurred since the German physician had ceased to visit him. The first hemorrhage appeared, from the man's description, to have been a general oozing from the opening farthest from the clavicle, and was stopped by the application of a cold cloth. The second hemorrhage occurred some six hours later, and was only stopped by the patient fainting. He was ordered an anodyne, which was to be kept up; a little stimulus, with broth, and other liquid nourishment; and the cold to be constantly applied. The following day the patient was more comfortable. Acetate of lead, acetate of morphia, and tincture of digitalis alternately during the day, were ordered, and the broth diet was continued with the local application of a cold cloth wrung out of lead water and laudanum.

The following day the aneurism had increased very much in size. The patient was disturbed by a constant cough, and his sputa were tinged with blood, and at times a good deal of pus. He had another hemorrhage during the night, was very anæmic, and evidently much weaker. He was most carefully watched; but bleeding more or less every day, he gradually sank. On the third of December I was asked to see him. The tumor I found extended from the angle of the inferior maxillary bone on the right side to the acromion process of the scapula, and from near the spinous processes of the lower cervical vertebræ posteriorly to beyond the interclavicular space anteriorly. The head was pushed over to one side, and the patient was breathing with great difficulty. The three orifices which were made for the injection of the perchloride of iron had all merged into one large orifice at the summit of the tumor, through which orifice the aneurismal clot was now emerging and its surface undergoing decomposition. He complained a good deal of cough and of a sensation of oppression at the summit of the thorax on the side of aneurism—the tumor evidently pressed against the lung, the phrenic and the pneumogastric nerves, and the trachea. In this critical condition, the breaking down of the clot so exposed to the external atmosphere would have caused death at any moment from excessive hemorrhage. The clot seemed to be pressed from below upward, not spasmodically, as if by the heart's action, but continuously and quite forcibly, thus causing it to protrude through the orifice at the top of the tumor, like a hernia, thereby preventing hemorrhage; yet there was at times a slight oozing of blood mingled with the pus of the breaking down clot. The whole tumor from base to summit was covered with small shreds of lint and thickly painted with collodion. Anodynes, digitalis, and a nourishing diet were recommended, and the patient was closely watched. He bled no more, but continued to sink, and died from exhaustion just thirteen weeks after he felt something give way in his right shoulder. Twenty-four hours after death an *autopsy* revealed the following condition of the parts:—

The tumor had collapsed but very little. An incision was made from above the hyoid bone to the pubic bone below. The innominate artery was traced up; the tumor was pressing upon its upper part, and likewise against the right carotid, compressing it against the lateral surface of the bodies of the lower cervical vertebræ, and thereby interfering materially with its functions, together with those of its two important neighbors, the pneumogastric nerve and internal jugular vein. The sac of the tumor was now opened, and the huge clot removed. The sac consisted only of the external coat of the artery thickened a little by inflammation. After the clot was removed, a *lacerated* opening about a quarter of an inch in extent was found to exist in the internal and middle coats of the third or last division of the subclavian artery, viz., the part existing between the external border of the scalenus anticus muscle and the inferior border of the first rib. The man had evidently ruptured the internal and middle coats of this artery in the exertions of tossing hay, as was demonstrated by the jagged appearance of the wound. The blood had forced itself out, and dissected up the external cellular coat of the artery, had extended down the axillary artery a short distance, and had proceeded upward posterior to the scalenus anticus muscle, as far as the bifurcation of the innominate artery, embracing all the branches of the subclavian, so that the first part of the vertebral, the external mammary, and the superior intercostal, and the whole of the thyroid axis were denuded of their external coat by the blood dissecting it off. The blood had dissected up so much of the external coat of the internal mammary artery, as to have formed a tumor as large as a hen's egg, which pressed against the pleura, and the upper and anterior part of the lobe of the right lung, causing it to break down, and giving rise in part to the pectoral symptoms so prominent a few days before death. The blood had also followed up the branches of the thyroid axis toward the acromion and upward toward the thyroid gland, and had caused extensive pressure against the phrenic and pneumogastric nerves and the internal jugular vein, by its extraordinary dissection of the external coats.

There was no cephalic disease, and only in one spot anywhere was there the slightest sign of degeneration; this spot was in the aorta just at the giving off of the cœliac axis, where there existed a very small atheromatous deposit. The lungs were perfect except at the summit of the right lung, where the tumor had pressed. Had this man been seen in a few hours after the accident occurred, the artery could have been ligated a little above the lacerated wound, just at the margin of the scalenus muscle, with some hopes of success. The character of the lacerated wound was peculiar; it extended in the direction of the long axis of the vessel and not around it. It was on the anterior surface of the vessel, and was small in extent. The innominate artery was very short, and all the branches of the subclavian came off from its first portion before pasing beneath the scalenus anticus muscle. All these conditions of the patient indicate that had he been operated upon soon after the accident occurred, and before the extensive diffusion of blood, there would have been much reason to hope for the most favorable results.

Cancerous Stricture of the Rectum.—DR. ALBERT H. SMITH exhibited a cancerous stricture of the rectum:—

James Money, aged forty-one, laborer, native of Ireland, entered the Pennsylvania Hospital on the 18th of August, 1858, suffering with symptoms of intestinal obstruction. He stated that he had had an attack of intermittent fever ten years previously, since which time he had always been affected with constipation. Eighteen months ago he became so much worse, with distension of the bowels and inability to evacuate them without immoderate quantities of purgatives, that he applied for admission into the hospital, and was treated there for about two months, for constipation, at the end of which time he was so much relieved that he felt able to resume his work. Six weeks, however, after his discharge the trouble returned with renewed violence, and ever since he has been suffering extremely, shifting about from one practitioner to another, without any permanent amelioration of his condition, and on the whole growing gradually worse.

When admitted, he was pale and emaciated, with a haggard, care-worn expression of face. His abdomen was enormously distended, and gave a loud, clear, tympanitic resonance on percussion; the distension was attended with great pain; there was no special uneasiness referred to the vicinity of the rectum. He had had no fæcal evacuation, except by injections, for five weeks, purgatives having no other effect than that of producing vomiting. His pulse was weak, quick, and frequent; tongue pale and flabby; his appetite gone. On making a careful examination of his rectum there was found to be a constriction about eight inches up, beyond which a large-sized rectal bougie would not pass, though an ordinary stomach-tube passed readily, and gave free vent to a large accumulation of gas. By means of the remedies indicated, his sufferings were entirely relieved, and Dr. Pancoast, being then the attending surgeon, attempted to dilate the stricture by graduated bougies, but it was found impracticable, as the parts were hard, firm, and unyielding. He continued without change, except an occasional attack of violent distension, which yielded promptly to remedies, until about the first of October, when Dr. Norris, then on duty, considering it a case of a cancerous character, had it transferred to the medical ward. As I had just previously been moved into that ward, I was fortunate in being able to retain charge of the patient. At that time the stomach-tube could no longer be passed, a good-sized urethral bougie alone could enter. The attacks of distension now became more frequent, the abdomen enlarging enormously, and becoming tense, and hard. These attacks were accompanied with extreme pain and prostration; vomiting usually attended them, though never of stercoraceous matter. The emaciation increased, and the life of the patient was an agony to which there was seldom a remission. The size of the instrument that would pass the constricted position gradually diminished, until the small rat-tail bougies alone could be admitted; there was evidently a great tortuosity of the rectum, and no metallic instrument could be introduced.

On the 13th inst. he was attacked, as previously, with inability to defecate, great distension, and with intense agony, which very soon prostrated him. The usual remedies failed to give relief; the smallest-sized flexible catheter could not be made to pass the point of constriction. His strength gradually failed, anodynes in enormous doses produced no alleviation of his misery, and he sank under it the following morning.

FIG. 7.

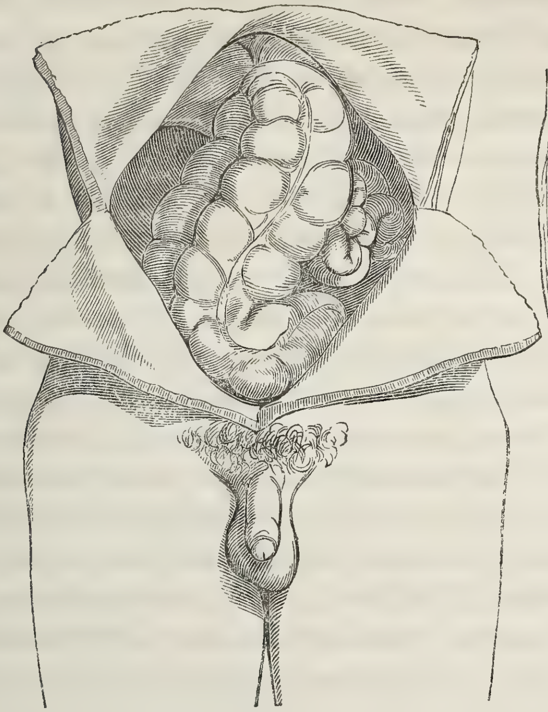
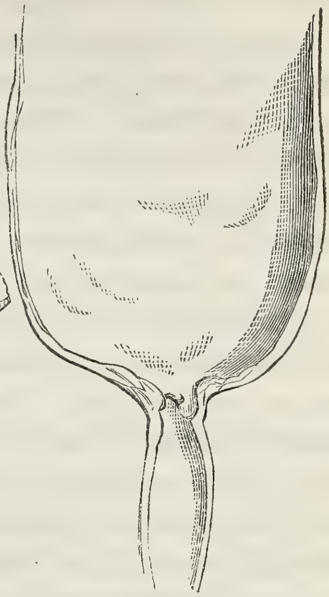


FIG. 8.



Autopsy.—The appearance of the body was most striking; the head and both upper and lower extremities were wasted to the bone, while the trunk presented a resemblance to the old Greek amphora, the thorax being compressed to the size of a child's, and looking like a protuberance upon the spherical mass of the abdomen, which measured *more than five feet in circumference.* It had the firmness and resonance of a drum-head. An incision was made over the sternum, carried down into the abdominal parietes, where the skin literally cracked before the knife as it was lightly touched. When the incision had reached about an inch above the umbilicus there was a sudden explosive report, with the expulsion of fæcal matter and gas, and an immediate subsidence of the whole abdomen to about one-half its original dimensions. Examining for the cause of this I discovered that the colon lying across the abdomen had at this point given way, being no longer able to resist the distension from which the support of the abdominal parietes was now removed. Continuing the incision and exposing the whole contents, a most interesting condition was exhibited; the small intestines were in their normal position, though greatly enlarged; but the whole colon was loosened from its peritoneal attachment, the ascending taking a course diagonally to the left hypochondriac region, forming an acute angle, descending again over itself to the right iliac, from which it made a circular sweep into the pelvis to the rectum. There was no portion which could be called transverse.

After the intestines had subsided considerably, the descending portion of the colon almost concealed the rest of the viscera, being throughout its whole extent enormously dilated, measuring at one point, even after the distension was removed, *eighteen inches in circumference*, and in no place less than fifteen. The peritoneum appeared healthy. About eight inches above the anus, in the rectum, was a stricture of the gut, at which, from the dimensions above stated, it narrowed down to about one and a half inches in circumference; (Fig. 8;) it was hard and cartilaginous to the touch On opening the bowel at this point the passage was found contracted down to the size of a small quill, and immediately below the orifice toward the anus was a pediculated tumor about as large as a pea, of a firm texture, and rose-colored. Subsequent examination proved this tumor, as well as the coatings of the bowel at the constricted point, to be undoubtedly scirrhus. The coatings of the intestines were universally softened, tearing whenever any force was applied to them. There must have been more than two gallons of liquid fæces in the bowels. All the other viscera, abdominal and thoracic, were carefully examined, without any evidence of disease; not the slightest trace of cancerous deposit being found elsewhere.

Curiously Twisted Umbilical Cord.—DR. ROBERT P. HARRIS presented a spirally formed umbilical cord obtained, the day previous to the meeting, from a healthy primipara, delivered of a well developed male fœtus. This cord formed a continuous helix from the placenta to the umbilicus of the fœtus, in which there were between thirty and forty turns, each measuring (before the pulsation ceased) about three-quarters of an inch in diameter. Notwithstanding this spiral arrangement, the cord, when measured in a direct line, was about the usual length of this conduit when normally formed, reaching, after the expulsion of the child, from the umbilicus, up around the neck of the fœtus, down over its chest and abdomen, and to the placenta which was still within the uterus and firmly attached. In making traction to deliver the placenta the spiral portion within the vagina was necessarily elongated, or straightened out. The external portion not so pulled, which was presented to the Society, constituted, when fresh, a helix composed of twenty-eight spiral turns.

DR. KELLER remarked that twists and knots in the cord present many points for study. Knots in the umbilical cord may be of a simple or of a complicated nature. They may be of long existence before the birth of the child, or they may form during parturition. In the latter case they are produced while the child passes through a noose which is situated on the os tincæ, or twisted about the child's body. Thus a knot more or less tightly tied is produced which can immediately be loosened without leaving the slightest impression by which to indicate that it has existed. Those knots originating from the movements of the fœtus are often highly important to its existence, because if such a knot be drawn very tight the circulation between the fœtus and the placenta is diminished, if not entirely suspended. Sometimes, however, we meet with such knots, and even with those of a more complicated nature, which, by the impressions in the Whartonian jelly, evidently prove that they have been a long time present. A case of that kind occurred in his practice, on the 10th of March, 1858, the patient being a native of Switzerland. After her delivery of a healthy and stout girl, the umbilical cord presented a double knot resembling the figure 8, with deep impressions eight lines from the child's navel.

The lady, whom he had attended in confinement several times before, exhibited this abnormity for the first time.

In the course of some further obstetric remarks, Dr. Keller mentioned that he had recently delivered a lady of twins in whom he had found a perfectly movable xyphoid cartilage.

Report of the Committee on a Diseased Scapula. (See Proceedings of November 24th.)—The committee appointed to examine the scapula removed from a patient who had undergone amputation at the shoulder-joint, would respectfully report, that they considered the fragment lodged at the upper border of the glenoid cavity to be the acromion process of the scapula broken off and displaced downward.

This conclusion was arrived at accurately by comparative measurements, as follows:—

	NORMAL BONE. Inches.	SPECIMEN. Inches.
Length of spine of scapula . . .	$5\frac{6}{8}$	$4\frac{1}{2}$
Acromion process	2	$1\frac{1}{4}$

At the acromio-clavicular junction there were all the evidences of an articulation, such as a sac containing synovial fluid.

As to the change of form in the glenoid cavity, the committee are led to the conclusion that it was subsequent to the amputation, the statement of the surgeon amputating, that the glenoid cavity was healthy at that time, inclining them to this view.

HALL, HEWSON, PACKARD.

WEDNESDAY EVENING, January 12th, 1859.

The President, DR. LA ROCHE, in the Chair.

Pericarditis.—DR. GROSS exhibited a specimen of extensive pericarditis, affecting the whole of the cardiac portion of the pericardium. The masses of lymph hung on the membrane like delicate villi; some almost half an inch in length and an eighth of an inch in breadth. The left ventricle was slightly hypertrophied. No history of the case could be obtained.

Hypertrophy of the Muscular Coat of the Bladder; Occlusion of the Prepuce and Inflammation of the Kidneys and Ureters.—DR. GROSS exhibited a bladder, the muscular coat of which was hypertrophied:—

Thomas Snellard, twenty-one years of age, a native of Philadelphia, had been affected with incontinence of urine for the last fourteen years, and had not, during all that period, ever passed a continuous stream, the urine constantly dribbling away. This was attended with a dull, heavy pain in the pelvis, and a sharp lancinating pain in the lumbar region, which was most severe over the right kidney. Six years ago he received a wound in the sole of the right foot from a nail, and within a period of three years fourteen pieces of bone were discharged, leaving the foot very much contorted and deformed. During the past summer he was attacked with diarrhœa, but it was only five weeks previous to his death that he was confined to his bed, during which time his bowels were almost constantly relaxed, and he became extremely emaciated. His general health was always delicate; several of his aunts and uncles had died of consumption. He would never permit an examination of his bladder or penis, so that the cause of the vesical trouble was unknown to his attendant, Dr. McQuean. The cause of death was extreme exhaustion produced by the diarrhœa. The autopsy was made on the third of January, twenty hours after death, the body being much emaciated.

The muscular coat of the bladder was hypertrophied, the organ being a beautiful specimen of what is known as the columniform bladder. The ureters were enlarged and their mucous lining was the seat of a fine capilliform injection, and in some places of softening. The right kidney was enlarged, and contained about two ounces of pus, its fibrous investment being in some places opake and firmly adherent to the organ. The left kidney was somewhat smaller than natural. In searching for the cause of these effects it was found that the prepuce was adherent to the glans-penis and that a very small opening was all that permitted the escape of urine. Just behind this a large pouch had formed capable of containing a drachm of urine. This state of things, which could have been easily remedied, had never been suspected during life.

Hernial Dilatation of Bladder; Dilatation of Ureters from Stricture of Urethra.—DR. LENOX HODGE exhibited a hernial dilatation of the bladder:—

J. McC., aged sixty-four years, had had stricture of the urethra for more than twenty years. He had an almost constant desire to urinate, could pass but a few drops at a time, and was in the habit of making violent straining efforts, so much so as to cause prolapsus of the rectum, and extravasation of urine into the cellular tissue of the scrotum. He died in the Pennsylvania Hospital on the twenty-sixth of December.

Upon making the post-mortem examination we found a dilatable stricture of the urethra, extending from just behind the glans backward about eighteen lines, and a cartilaginous stricture about six lines long at the membranous portion, where ulcerations through the walls of the urethra were discovered. The muscular walls of the bladder were excessively hypertrophied, and the cavity extremely small; at the upper and posterior part of its right side was a hernial dilatation equal in size to that of the bladder itself; the walls of this dilatation were very thin, and consisted simply of mucous membrane, and thickened peritoneal covering. Each of the ureters was dilated to the size of the urethra. The kidneys were healthy. There was an osseous deposit about six lines in diameter in the spleen, but none in the heart or arteries.

Meningitis in a Patient who had had Delirium Tremens.—DR. LENOX HODGE presented a specimen of arachnitis. The brain was deeply injected throughout; the arachnoid was thickened and opake; its cavity contained about six fluidounces of serum, while the sub-arachnoid space was nearly or entirely empty.

W. T., from whose body this brain was taken, was admitted into the hospital on the fifth of January, for a fracture of fibula. Being an habitual drunkard, the symptoms of delirium tremens soon appeared, became complicated with those of meningitis, and he died on the evening of the eleventh.

DR. STILLÉ inquired whether there had been any symptom indicatory of the commencement of the inflammatory disease, and also whether the delirium was positively that of mania a potu. Had the patient the hallucinations peculiar to delirium tremens?

DR. HODGE replied that the patient was known to have been a hard drinker, and was said never to have consumed less than a pint daily. He had had hallucinations from the first, although he evinced no fear, and spoke of never having had delirium tremens.

DR. STILLÉ felt by no means satisfied that the man had had delirium tremens. Persons are often supposed to have delirium tremens who have in reality inflammation of the brain. Men are admitted into a hospital in whom after accidents, or otherwise, delirium is a prominent symptom. They come from a class of population who all drink more or less, and this fact is deemed sufficient to make out a diagnosis of delirium tremens. Many also are supposed to be insane, who are in reality laboring under meningitis. It becomes thus of the greatest practical importance to distinguish the delirium of inflammation of the brain from that produced by other causes.

DR. GROSS thought that delirium tremens might give rise to inflammation of the meninges. It did not seem to him of such great importance, as regards the treatment, to diagnose an inter-current meningitis. Depletives could in neither case be employed; anodynes would be the best remedies.

DR. HEWSON agreed with Dr. Stillé as to the overrating of the occurrence of delirium tremens in hospitals. He referred to the fact that meningitis was not a rare cause of death in the hospitals of Paris, while it is well known that delirium tremens is an affection there not often met with.

DR. PACKARD, alluding to the post-mortem appearances in delirium tremens, said that two cases occurred when he was resident in the hospital, in which congestion supervened with a fatal result; at least, this condition was detected by post-mortem examination in one of them, and the other case was remarkably similar. Both were in veteran drinkers; both had lasted somewhat over a week; in both there was great depression of spirits and dread of death, and extreme irritability of stomach. In both the symptoms were ameliorating, when suddenly violent convulsions, with screaming and frightful delusions came on, and proved fatal, in one case in twenty minutes, and in the other in four hours.

An autopsy upon the former showed congestion of the dura mater, pons varolii and choroid plexuses, and a good deal of effusion beneath the arachnoid. No important phenomena were noticed in the other viscera, except patches of inflammation on the inner surface of the stomach.

Strangulated Hernia; Omentum Hypertrophied and Mistaken for a Diseased Testicle—DR. ADDINELL HEWSON exhibited a portion of omentum which he had had occasion to remove in an operation for strangulated hernia about ten days previously. The specimen was somewhat curious in itself, and the circumstances attending the case made it of peculiar interest. The patient from whom it was removed was a German, aged about thirty-eight years, who had been the subject of a scrotal tumor for over two years. When this tumor first made its appearance, the patient's family physician supposed it to be an omental hernia. Subsequently the presence of a portion of intestine was recognized as composing a part of the tumor. This became strangulated, and two surgeons saw the case, but failed by the taxis to effect its reduction. As, however, the symptoms were not then urgent, they postponed operating, and in their absence the intestine returned. This all happened about six months after the first appearance of the swelling in the scrotum. The scrotal tumor, however, remained, and had increased much in size since its first appearance. It was hard, nodular, irregular in form, although somewhat pear-shaped, and presented unmistakable signs of the existence of fluid in its interior.

The patient then consulted, but at different periods, two other surgeons, who gave their opinion that his case was one of hernia, complicated with diseased testicle, and he was tapped three times by two of the four surgeons who had then seen him, for the removal of the fluid contained in the scrotum. The quantity drawn at either of these operations never amounted to more than a drachm or two, and was clear and straw-colored. The patient wore a truss very constantly from the first appearance of the hernial protrusion of the intestine, but in spite of this the gut again became incarcerated on two different occasions, and on both these occasions after it had resisted all efforts at reduction with the taxis, it returned of its own accord. In the former of these attacks it was incarcerated twenty-four hours, and in the latter about seventy hours, but at neither time were the symptoms urgent; there was never any stercoraceous vomiting.

On the occasion on which Dr. Hewson operated, the symptoms of strangulation had lasted over seventy-five hours, and the indications for the operation were well marked. The scrotal tumor was then large, about four inches in diameter, pear-shaped, and smooth, having lost the irregular form which it had possessed, and on opening the sac, the large mass formerly supposed to be a tumor of the testicle, was found to be a portion of omentum which had undergone fatty hypertrophy, and was adherent at one point to the coverings of the testicle.

The edge of this portion of omentum was very nodular, and formed a complete ring around the intestine. Some of the masses of fat were here as large as the testicle. Dr. Hewson remarked that it could thus be seen how readily a mistake could be made under such circumstances, especially as the imperfect English of the patient could not aid much in supplying the facts or the history of the case so necessary for accuracy in the diagnosis.

Fatty Liver.—DR. HALL exhibited, for DR. HOYT, a fatty liver removed from the body of a man aged fifty-two, who had been subject to attacks of bronchitis and of jaundice. The bowels were habitually constipated, and the stools dark and offensive. Ten days prior to death there was incessant vomiting. On post-mortem examination, the lungs presented no evidence of tubercle, but exhibited evidences of having been affected with bronchitis. The liver was markedly fatty; the other viscera were healthy. The intestines and peritoneum were deeply dyed with bile.

WEDNESDAY EVENING, January 26th, 1859.

Vice-President, DR. STILLÉ, in the Chair.

Fibrous Tumor on the Walls of the Abdomen.—DR. GROSS exhibited a tumor, partly of a fibro-plastic, and partly of a colloid nature:—

E. H., eighteen years of age, first noticed, thirteen months ago, a movable, firm, inelastic tumor, about the size of a hen's egg, just underneath the skin of the abdomen to the left of the umbilicus. During the early part of last summer it had increased to the size of a large orange. It grew from above downward, was not accompanied with enlargement of the subcutaneous veins, and did not give rise to pain or any inconvenience. At the time of the operation the tumor was about nine inches in length, of a solid and inelastic feel, and slightly movable. The linea alba was curvilinear, having been pushed over to the right side. The general health of the patient had always been good. On the twelfth of January the tumor was removed at the Clinic of the Jefferson Medical College, chloroform having been administered. It was found to be very firmly adherent to the muscular structures of the abdomen, which were atrophied and spread over its external surface. Great care was required to detach it from the transverse fascia. The main arterial supply was at its lower portion, from an enlarged branch of the superficial epigastric, which required a ligature. Several points of the interrupted suture were applied to the opposed sides of the muscles, and to the integument. These, with adhesive strips, a compress and roller, constituted the dressings. At the present time the wound is nearly healed.

Examined by Dr. Packard, under a magnifying power of 472 diameters, there were seen—

1. Colloid masses of variable size, generally irregularly oval in shape; outline dark; contents very slightly granular, and showing bright oval spots like nuclei clustered together.
2. Exquisitely fine pale granular cells, nucleated, with double vesicular nucleoli; often elongated.
3. Coarser cells darker colored, with large nuclei, sometimes with many nuclei. These cells were arranged in masses, with fine fibrous tissue intermixed.
4. Very fine fibro-plastic cells, with large nuclei, and one or more nucleoli.

Myeloid Tumors of the Abdomen, involving the Head of the Pancreas; Perforating Ulcer of the Stomach.—DR. DARRACH presented, for Dr. Levizey, specimens of myeloid tumors, with Dr. Levizey's account of the case. The case from which the accompanying specimens were removed was a patient of Dr. Hiram Corson, of Montgomery County, who has furnished the following notes of the case. The abdominal distension had during life been recognized as caused by the pancreatic tumor.

George Cramer, aged twenty-three, who had always enjoyed good health, with the exception of an attack of intermittent fever about two years ago, began to be slightly jaundiced in June last, and about that time discovered a small tumor of the size of a hickory-nut in the right iliac region. The jaundice steadily increased, but he continued to work up to August, when the lump became irritated by the ends of the sheaves while he was feeding a thresher. His physician directed him to poultice the tumor, and in a few days plunged a lancet into it, supposing it to be an abscess. Poultices were continued two weeks longer, and occasionally the swelling was probed, yet there was never any discharge from it.

The patient still continued to work until October, when he was treated by another physician for two weeks, with mercurials for disease of the liver. Then he came under Dr. Corson's care, who made the following note of the case on November 9th, 1858:—

He is deeply jaundiced; has a tumor in the right iliac region as large as a big orange—lobulated and solid; skin over the tumor discolored in spots, being red and purple, with the fine branches of blood-vessels ramifying over patches of it; the cicatrix of the puncture is a little elevated, with a very fine skin over it, which seems as though it were not connected with the parts below; the right side over the liver is larger than the left; dullness a little higher than usual on this side of the thorax; on a level with the umbilicus, and near to the lower margin of the liver, is a distinct, hard body, giving no resonance, though there is a narrow line of resonance between that and the liver. The other tumor appears to be entirely external. He complains much of the left knee; there is great pain at the inner condyle, with some swelling just above it; the urine is very dark, and colors muslin a deep yellow. He is costive, with no appetite, and gets but little rest. The mercurials were continued, with opiates at night, and blisters over the internal tumor and region of the liver, and a cathartic pill occasionally. His stools are light-colored.

November 27th.—Stopped the mercurials a week ago on account of sickness and loss of appetite, which has since returned; the bowels have been moved once or twice daily; blisters have been well kept up, and there is a lessening of the fullness over the liver; urine unchanged; skin very yellow; external tumor double the size and greatly mottled; left knee still painful, and swollen on the inside. He takes but little nourishment, but has not vomited since he was first seen; sleeps well under one-quarter to one-half a grain of morphia; he cannot leave the bed; is much emaciated; has a full pulse of a 104 at all times.

December 5th.—Patient is better; skin is more natural; pulse, which has been 104 for weeks, is now only 96; tongue clean and natural; thirst for cold water very constant; with a good appetite. Ordered no medicine but morphia at night; bowels moved every day; and the stools are of a much darker color.

1859, January 1st.—Appetite voracious for the last two weeks; permitted him to eat as much and what he pleased; pulse 104; external tumor growing rapidly, and covered with fine, vermilion-colored branches of blood-vessels, in patches; the tumor in the abdomen can now be distinctly seen, elevating the parietes for about three inches.

January 16th.—Appetite still inordinate; complains of much pain in the knee, but sometimes has pain in the abdomen, and then the knee is easy; sleeps pretty well; bowels moved once or twice daily; is frightfully emaciated.

January 22d.—For the last two days he has been quite easy, but died at twelve o'clock to-day. About twenty hours before death he had inward spasms, with difficult breathing, and seemed to suffer very much.

Autopsy twenty-four hours after death. Body excessively emaciated; the external tumor in the iliac region was found to extend from a little above the anterior superior spinous process of the ilium to the pubes, and toward the middle of the abdomen about four inches across.

In dissecting up this tumor it was found to be resting upon the external oblique muscle, and adherent only by connective tissue to that structure. On making a section of this growth an appearance similar to that of soft marrow was presented, with here and there patches of a pinkish hue. Under the microscope this structure was found to consist of fat, with other cells, characteristic of myeloid tumor, (as described by Paget.) Some of these cells were shown, by means of acetic acid, to contain a nucleus, nearly filling the cell, and with one or more nucleoli.

The internal tumor, which had been recognized through the integuments, was found occupying a part of the umbilical and right hypochondriac regions. It was attached along its lower margin to the transverse colon, above and posteriorly to the duodenum; the latter was found very much thickened. This tumor also involved the head of the pancreas, and was adherent to the omentum and surrounding structures. Examined by the microscope it presented the same appearance as above mentioned. The right lobe of the liver was found enlarged, very much congested, and infiltrated with bile. The gall-bladder was distended to two or three times its natural size, and filled with bile; its duct being large enough to admit the index finger with ease. This distension was probably caused by the pressure of the pancreatic tumor.

Firmly attached to the lobus Spigelii was found a third tumor, about two inches in diameter, and of a much darker color than either of the others, but microscopically the same.

The consistence of the pancreas was denser than normal. Upon opening the stomach an ulcer, which had perforated all of its coats, was found upon its posterior wall, a little below the lesser curvature, and nearly midway between the cardiac and pyloric orifice. An enlarged gland upon the outer surface of the stomach, and near the ulcer, acting as a valve, probably prevented any escape of fluids into the cavity of the abdomen; the patient never having shown any symptoms of peritonitis, and no evidence of the same was discovered upon dissection.

The kidneys and spleen were very much congested, but presented no other abnormal appearance. The knee was not examined, but from the symptoms of the patient, it may fairly be inferred that the same disease existed in the inner condyle. Heart and lungs healthy. Brain not examined.

DR. DARRACH spoke of the views of Paget and Lebert, who compared myeloid tumors in their structure to the marrow of bone. Paget refers to a tendency shown by them to occupy the same seat as epulis. Dr. Darrach thought that in this case the tumors had formed previous to last June, and caused the jaundice by pressure. The disintegration of the liver-cells may perhaps have had something to do with the death.

DR. GROSS spoke of the equivocal position of myeloid tumors in nosology, and expressed a belief that they would be ultimately placed among encephaloid growths. The ulcer in the stomach, he thought, partook of the same character as the mass in the pancreas. He moved that the specimen be referred for examination to a committee.

Double Pregnancy—one Tubal, the other Uterine.—DR. PACKARD presented a specimen of tubal pregnancy, sent to Dr. Hodge in 1849, by Dr. Craghead, of Danville, Virginia:—

The woman was a negress, aged thirty-five. She had had symptoms of an ovarian tumor; these suddenly became aggravated by the occurrence of collapse, and she aborted, discharging a well-formed fœtus of somewhat over three months. Two days afterwards she died.*

At the post-mortem examination, "the whole abdominal cavity was found filled, anteriorly, with coagulated blood, and posteriorly with serum, which had proceeded from the rupture of some of the vessels of the left

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* Case reported in Am. Journal for 1850.

Fallopian tube, now greatly enlarged, and converted into a membranous sac, containing a fœtus of the same size as the one delivered *per vias naturales.*"

Intracapsular Fracture of the Neck of the Femur; Fracture of the Trochanter Minor.—DR. LENOX HODGE exhibited an intracapsular fracture of the femur:—

H. F., aged seventy years, having fallen while going down the stairs of the Merchants' Hotel, fractured the neck of his femur, and was admitted into the Pennsylvania Hospital, on the 11th of December, 1858. He lived for five weeks and three days, and died from the effects of a diarrhœa on the 18th of January, 1859.

An autopsy showed the fracture of the neck of the femur to be within the capsule, except for a short distance at one point. The trochanter minor also had been fractured at its base. This last had united, and was surrounded with callus, though not perfectly consolidated; in the other case there had been no attempt at union. The specimen thus exhibits at once the difference in the action of nature when the fracture is intracapsular and when it is not.

Inguinal Hernia; Death from Peritonitis.—DR. JAMES HUTCHINSON, in presenting the specimens, said:—James Mackay, aged twenty-seven years, had been the subject of a reducible hernia in his left groin for a number of years. About the close of November, while engaged in lifting heavy barrels, it became strangulated, and after suffering for twenty-four hours he applied to a surgeon, who placed him under the influence of chloroform and succeeded in reducing it by taxis.

Ever since the man has suffered from severe pains in his abdomen, accompanied with vomiting and constipation. He entered the hospital six weeks after.

At the time of his admission into the hospital a small firm tumor occupied the inguinal canal, and some fullness was observable in the course of the cord below. His pulse was seventy-two, and even during the paroxysms of pain it never at any time exceeded ninety. The features wore a pinched expression. He vomited incessantly. His bowels were readily acted upon by enemata, which invariably afforded relief, and which brought away large quantities of fæcal matter, which was on one or two occasions ribbon-shaped.

During the past week his symptoms had decidedly improved. The vomiting had entirely ceased, and the pain was present only at rare intervals. Suddenly, on Sunday evening, he was seized with the signs of peritonitis, and death took place in a few hours.

An autopsy was made eight hours after death. The abdomen was somewhat distended with gas which had escaped into the cavity of the peritoneum. Upon cutting down upon the course of the cord, a small piece of omentum was found in the inguinal canal; it was, however, not at all strangulated. The abdomen, when opened, was found filled with fæcal matter, which had escaped from the jejunum. The omentum was united to the abdominal parietes, just outside of the internal ring, and bound down with it a portion of the small intestines, so diminishing its caliber that a large-size urethral bougie could hardly be passed through it. Just above the constricted portion was a small ulcer, by means of which the perforation had taken place.

Dr. Gross gave a further history of the case. He had succeeded in reducing the hernial tumor, although it had been strangulated for several days, by placing the patient under one grain of morphine and employing chloroform. The man was in good health for three weeks afterwards, when he commenced to complain of some abdominal tenderness, for which he was sent to the hospital. Dr. Gross further stated that since the introduction of anæsthetics he seldom used the knife, even when strangulation had existed for thirty hours.

American Progress of Medical Science.

REPORT ON THE PROGRESS OF PATHOLOGICAL ANATOMY.*

By J. Da Costa, M.D.

The subject of Pathological Anatomy, from its intimate connection with diagnosis, is one which has engaged the attention of the master-minds of the profession ever since medicine has been cultivated as a science. Its importance in this age of research and of sifting of theories has been especially felt; and it would not be a difficult matter to prove that its present cultivation has been one of the main causes in bringing about that accuracy of diagnosis, and the more correct appreciation of the value of remedies, which is the pride of modern medicine. In most of the cities of Europe its value is testified to by the valuable contributions annually made to it, and by the institution of chairs from which it is taught as a separate branch. In this country such is not, with few exceptions, the case; but that the medical mind is alive to the importance of the study, is shown by the establishment, in some of our larger cities, of Pathological Societies, which have already given evidence of so much vitality, that a still brighter future may be safely predicted for them. The establishment of these societies is undoubtedly a means of increasing and diffusing pathological knowledge: yet it is very desirable that those whose opportunities permit of it, should contribute connected observations, and not merely isolated facts, whose value for the positive advancement of the science is, after all, but fractional, since, with rare exceptions, they furnish but little toward the elucidation of those laws governing pathological processes, which are so important in understanding, and in endeavoring to counteract the natural tendencies of disease.

We may be pardoned for this digression at the commencement of what is intended to be simply an analytical record of the progress of Morbid Anatomy during the last eight or nine years in this country. But we have been struck with the circumstance alluded to in examining the periodicals for our report. While we have met with many most valuable isolated observations scattered over the various journals, we have found but few papers discussing in a general manner points connected with Pathology or Pathological Anatomy. Sometimes even the descriptions of the post-mortem appearances appended to cases whose interest during life was very great, are so hurried as to throw no light whatever on the real nature of the disease. Having thus indicated the material we have had to select from, it will be seen that two methods of writing this record presented themselves—either to confine ourselves strictly to an analysis of the papers on pathological subjects, or of exclusively pathologico-anatomical observations which have appeared, or else, in addition, to classify and connect those cases of interest in which the post-mortem appearances are described.

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* This report embraces the years 1850–59. As it was prepared several months ago, the latter part of 1858 is not included.

After some reflection we chose the latter, believing that, although far more laborious, it would be of more value, and accomplish more satisfactorily the object of the report. It is evident that we had to content ourselves frequently with mere references, and that only to the more interesting cases, for it is equally evident that had we attempted to transfer, or even cite every case in which the post-mortem appearances are given, all the pages of this journal would hardly have sufficed. The rule we have endeavored to follow has been, to place at the head of each section the title and references to those papers which treat of the subject in a comprehensive way; then briefly to indicate their contents; while the morbid appearances in isolated cases are usually referred to in the body of the report. It is of course not possible to affirm, that where we have had to examine so many publications, nothing valuable has escaped us; doubtlessly that will be found in some instances to have been the case; but we trust that we have been successful in collecting together the main facts of interest, and that in this respect our record, while it neither claims to be exhausting, nor even fully analytical, may at least serve as a classified bibliographical index to the more important of the subjects discussed. Cases, whose interest lay more in their history, or in their elucidating some special point of treatment or diagnosis in surgery, obstetrics, or the practice of medicine, have been briefly or not at all touched upon. Indeed, the very word *case*, that we have been so frequently obliged to use, suggests to us that the peculiar character of the materials used have given to this report, in many respects, less of a strictly pathological, and somewhat more of a clinical bearing than records of this nature are intended to possess.

Not to drag out this introduction to a tedious length, we would merely add, that the classification was more prompted by convenience than intended to be scientifically accurate, and that the task we have set before us has been that of an analyser, and not that of a critic.

In reviewing the different works which have appeared in this country on Pathological Anatomy, we have, in addition to translations and reprints of standard foreign works, such as of Hasse, Baillie, Craigie, Jones, Sieveking, and Rokitansky, the well-known volumes of Horner and Gross. Nor must we omit to mention here the descriptive catalogue of the museum of the Boston Society for Medical Improvement, (Boston, 1847,) arranged by Dr. Jackson, which contains a large number of valuable facts, with the history of many of the cases attached, and is thus one of the good fruits which this active and valued society has borne. Most of the other contributions have appeared in the pages of medical journals; and we trust it may not be considered presumptuous if we express a hope that another society, whose zeal and value is appreciated everywhere, the Pathological Society of New York, would record in a permanent form, by collecting in a volume, those interesting observations and facts which the opportunities of a large city, and the zeal of the members, have brought together.

GENERAL PATHOLOGICAL ANATOMY.

So few papers have appeared that would legitimately come within the scope of this part of our report, that it would be useless to attempt to classify them. We shall content ourselves, therefore, with simply placing such together as treat more or less on similar subjects, or such observations whose interest lies in their contributing to the study of some point of general morbid change.

MONSTROSITIES—MALFORMATIONS.

S. S. Purple.—"A Literary, Historical, and Practical Sketch of Acrania, or Pseudo-encephalous Monsters;" New York Journal of Medicine, vol. iv., 1850.

George C. Blackman.—"On Hermaphroditism;" Am. Journ. of Med. Sciences, July, 1853.

Charles D. Meigs and G. W. Boerstler.—"Case of a Monstrous Birth, with Remarks;" Am. Journ. of Med. Sciences, July, 1855.

A. Jacobi.—"On Irregular Development of the Infantile Cranium;" New York Journal of Medicine, January, 1858.

The subject of monstrosities is one which, in its descriptive parts, has received considerable attention; in its more general and philosophical bearings, but little.

Dr. Purple, in the paper quoted, discusses the subject of brainless monsters in its pathological and medico-legal relations, analyzes some of the reported cases, and adds the description of a fœtus born of a healthy mother after a labor of only thirty minutes, in which the frontal and squamous portion of the temporal bones, together with the superior portion of the occipital and the contents of the cranium, seemed to be wanting down to a point level with the base of the cranium; this was covered with a thin membrane connected to the skin. Over the site of the superior portion of the medulla oblongata, a vascular tumor was seen; pressure upon this tumor gave rise to convulsive action of the whole system. The child lived two days and a half.

Dr. John C. Dalton, Jr.* has detailed an interesting case of malformation of the cranium, encephalon, and spinal cord. Every part of the fœtus, externally, was perfect, excepting the face and cranium. The coverings of the brain partly resembled skin, and partly serous membrane.

An anencephalous fœtus was dissected by Dr. Chas. E. Isaacs.† Not the slightest trace of a head could be found; its place was occupied by a quantity of cellular tissue, covered by very smooth integument. There was no heart, and the place of the lungs was supplied by small masses of cellular tissue. The spleen also was absent. Another specimen of the kind is described by the same author,‡ and further interesting cases of monstrosities reported by Dr. J. W. B. Garrett,§ and by Drs. G. W. Garland‖ and W. F. Atlee.¶ In Dr. Atlee's valuable case, the monster belonged to the genus of peracephalus, (St. Hilaire,) having no head or upper extremity.

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* American Journal of Medical Science, April, 1850.

† See New York Journal of Medicine, vol. iv. p. 331.

‡ Ibid., vol. x. p. 205; 1853.

§ Western Journ. of Med., July, 1850.

‖ Ibid., vol. vii. p. 212; 1851.

¶ Am. Journ. of Med. Science, April, 1858.

Dr. Charles D. Meigs* describes a double-headed anencephalous fœtus, with two well-formed arms and legs, and a single trunk; and in another communication,† a specimen presented to him by Dr. Boerstler, with two heads, four arms, two chests down to the ensiform cartilages, but from the junction downward only one body, its anterior surface, from side to side, broader than in an ordinary child; two perfect spinal columns; two pelves united, the left one belonging to the larger side, encroaching upon, and lessening that of the right side. The sex was female; one vulva and one anus; the opening of the latter not larger than an ordinary rye-straw. In addition to the two legs, there arose from the dorsum of the two ossa ilia, a leg which ran up between the two spines and the two inner shoulders, and which terminated in a right and left foot joined at the heel. This was, in truth, a double leg, having two femurs, two tibias, and two fibulas. Not the least remarkable circumstance about this curious monstrosity was that the children lived for upwards of a month.

In a fœtus which Dr. G. F. Fisher‡ has described, two heads, both hydrocephalic, were attached, each by a distinct neck, to a body which was single. The thoracic cavity contained one large heart. A monster in some respects very much like that of Prof. Meigs's, is described by Dr. Jas. B. Dungan.§

Dr. J. B. S. Jackson‖ has given an instance of malformation in an adult subject, otherwise well formed, consisting apparently of a fusion of the two upper extremities.

One of Dr. Blackman's cases of malformation of the sexual apparatus is truly remarkable. In the body of a person about twenty-six years of age there was a penis, an empty scrotum, a prostate gland, a vagina, an os tincæ, a uterus, a bladder, right and left Fallopian tubes, right and left testicles, right and left ovaries, a rectum, a right and a left vas deferens. The vagina opened into the neck of the bladder, and thus communicated with the urethra; its inner surface was reddened, and its cavity contained menstrual blood. The Fallopian tubes were pervious. Dr. Burnett,¶ who also examined the organs, states the vagina to have been of the usual size, but contracted at its lower part, into a small tube, which passed into the urethra between the lobes of the prostate glands. Dr. J. B. S. Jackson** investigated the same specimen, and found some thickening of the tissues where the ovaries should be, but it was ill defined and slight. Upon one side an incision was made into this questionable part, but nothing like a Graafian vesicle was seen, merely a loose fibro-cellular tissue; a yellow body was exposed, which was thought at first to be a corpus luteum, but proved to be a lobule of fat.

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[*] Am. Journ. of Med. Science, Jan. 1857 [†] Ibid., July, 1855.

[‡] American Medical Monthly, October, 1857, p. 229.

[§] New Orleans Medical News, May, 1857.

[‖] Society for Medical Improvement; Am. Journ. of Med. Science, January, 1853, p. 91.

[¶] Ibid., October, 1853, p. 368.

[**] Am. Journ. of Med. Science, October, 1854, p. 369.

While speaking of the malformations of special organs, we may allude to Dr. Jacobi's researches, who has brought together valuable information on the irregular development of the infantile cranium.

TEXTURAL CHANGES—NEW FORMATIONS—TUMORS.

W. J. Burnett.—"Tissue, and its Retrograde Metamorphosis;" Am. Journ. of Med. Science, July, 1851.

J. W. C. Ely.—"On Fatty Degeneration;" Am. Journ. of Med. Science, January, 1854.

W. J. Burnett.—"The Microscopical and Histological Relations of Enchondroma;" Am. Journ. of Med. Science, April, 1852.

Francis Donaldson.—"The Practical Application of the Microscope to the Diagnosis of Cancer;" Am. Journ. of Med. Science, January, 1853.

J. H. Brinton.—"Microscopical Observations of Tumors;" Medical Examiner, November, 1851.

J. Da Costa.—"Remarks on Epithelial Tumors and Cutaneous Cancers;" Medical Examiner, April and May, 1852.

J. J. Woodward.—"Minute Anatomy of Cysto-carcinoma;" Am. Journ. of Med. Science, July, 1858, and sequel to one of the cases. "Histological Observations on a Secondary Cancer of the Pleura;" October, 1858.

The paper of Dr. Burnett on tissue, and its retrograde metamorphosis, is one in which especially the fatty degeneration to which organs are liable, is described. "Constant practice in microscopical pathology," says the author, "is all the while convincing me of the frequency of this change in tissues, and that it may serve as the basis of many accidents in medicine," an opinion which the increasing research of every year has more and more verified. In all the instances of fatty degeneration of muscle met with, the cause could be traced either to a total disuse of the part, or to a previously existing inflammation, leaving the tissue with a poor and imperfect nutrition, or to a starvation of the part from local arterial obstruction. The causes and the appearances of parts fattily degenerated, are further considered in the summary of the subject which Dr. Ely has published.

Dr. Burnett reviews the appearances of the tumors denominated enchondromatous. He regards as doubtful many of the cases which have been recorded as cartilaginous formations, such as the growths in the tunics of the testicle, by Cooper, and the alleged cartilaginous tumors found in the peritoneal cavity. Several of these, from his own examinations, he states to have been of a fibrous nature. He gives the microscopic appearances of two cases of true enchondroma of the hand, similar in many respects to the classical description of Mueller; both of them contained cartilage corpuscles lying in granular stroma.

The subject of *cancer*, one of favorite investigation with pathologists of all ages, has had at no time more labor bestowed on it than since the application of the microscope to pathological researches. This instrument has shown us a certain group of elements constantly occurring in cancer, and which have, therefore, been regarded by many as characteristic. Especially has this been the case with the so-called cancer-cells. Dr. Donaldson, after insisting strongly upon the value of the microscope in the diagnosis of different growths, sides with those French observers who have described particular elements in cancer, and accounts for the difficulty which some have had of detecting them with accuracy, by the fact that they employed too feeble a magnifying power. He meets the objection of those who state that the microscope can be of no service in the living subject, by citing several cases in which it revealed evidences of cancer in small portions removed prior to the operation. He then proceeds to analyze the elements of cancer, speaking of the cancer nucleus as inclosed in a cell, or as floating free by itself; the polygonal, or more or less spherical and ovoid cells, the caudated cell, the fusiform cell, the concentric cell, the compound or mother cell, and the agglomerated nuclei connected by amorphous tissue. The nucleoli found in the cancer nuclei, are mentioned as of a yellowish tinge, with a brilliant centre and dark borders, refracting light like the fat vesicles. The peculiar brilliancy of the centres of these nucleoli, Dr. Donaldson regards as characteristic. The author then discusses, and illustrates by comparative drawings, the corpuscles which have been mistaken for cancer, such as the fibro-plastic cells, pus cells, and cartilage elements, which have been compared by Bennett to cancer cells. He does not understand how these latter can be taken for cancer, nor is he inclined to adopt Schwann's theory of cell-generation in cancer. On the whole, the essay supports the opinions of Lebert and Robin, and is corroborative of a special element characteristic of cancer.

Dr. Woodward describes the appearances of three cases of cysto-carcinoma, representing different stages in the development of this affection. In the first the tumor consisted of a fibrous cyst or sac, almost entirely filled with a clear, liquid, of a ruddy straw-color, which coagulated spontaneously on standing. In the upper part of the cyst was a soft pultaceous mass, composed of granules and nuclei, imbedded in a transparent matrix. In the second case, soft pultaceous masses adhered everywhere to the internal surface of the cyst, and yielded the same appearance under the microscope. The cyst wall was composed of white fibrous, mingled with yellow elastic tissue, with embryonic elements in such abundance, as to prove clearly that it was to a great extent a new formation. In a third case the whole cyst was filled with a soft, brain-like matter. These cases differ from ordinary cancer formations by the presence of a sac, and of an unusual quantity of blastema. In the first case a secondary cancer of the pleura was developed. Everywhere adherent to that membrane were found soft pultaceous masses, exactly in their minute appearance like those observed projecting into the cyst of the primary tumor. In the quantity of blastema this secondary formation was also allied to the primary growth, presenting thus many points of interest which are carefully detailed in the description.

Dr. Brinton has described and depicted the appearances of examinations of several morbid tumors of different kinds, cancerous and not cancerous. Dr. Da Costa has investigated the different forms of *epithelial* tumors. Their relative frequency in twenty-five cases he examined were—eleven of the lips, seven of the face, one of the trunk, two of the extremities, one of the penis, two of the tongue, one of the gums. Their minute structure is represented as consisting of cells, not usually larger than the ordinary pavement epithelial cells, of granules, and of small globular cells, which are either young epithelial cells, or free nuclei. The enlarged papillæ are coated with cells. The author also notes the appearance of cancer of the skin, which he believes to be distinct from epithelial formations. He gives the duration of twenty cases of epithelial growths that had come under his observation, from which it would appear that frequently the tumors are of slow growth, and the result of local irritation; and rejects the idea that they are cancers modified by the structures in which they are developed. The paper is followed by a report of several of the cases.

PARASITES.

Silas Durkee.—"Sarcina Ventriculi in Connection with Disease;" Am. Journ. of Med. Science, January, 1854.

Dr. Durkee describes the presence of sarcinæ in a case of ulceration of the lining membrane of the nose. A smooth glass rod being passed up the right nostril, upon its withdrawal was found loaded with a thick white caseous substance, not unlike what is often found upon the ulcerated tonsils of a scrofulous subject. Upon subjecting this to the microscope, masses of sarcinæ ventriculi, mixed with epithelium, free epithelial nuclei, and mucus, were noted. The author then gives the history and description of sarcinæ in general, and cites the instances adduced by Jenner and Heller, which prove that they originate in other organs besides the stomach. Dr. Durkee's case is among the first reported, which establish their general diffusion. They have since been found in the brain, and by Zencker and Virchow, in the lungs.

Dr. Leidy's work on Parasites is so well known, that we need but refer to it here as one of the best monographs which have appeared anywhere on the subject of which it treats.

SPECIAL PATHOLOGICAL ANATOMY.

NERVOUS SYSTEM.

Edward Hallowell.—"Observations on the Prevention of Phthisis, with Cases Illustrating its Natural History;" Am. Journ. of Med. Science, January, 1850.

W. Henry Thayer.—"Cases of Apoplexy, and the Various Forms of Softening of the Brain;" Am. Journ. of Med. Science, July, 1851.

Samuel Kneeland, Jr.—"Report on Idiotic Crania, Idiocy, and Cretinism," read before the Boston Society for Medical Improvement; Am. Journ. of Med. Science, April, 1851, p. 349.

Thomas F. Cock.—"Cases of Cerebral Disease;" Am. Journ. of Med. Science, October, 1852, p. 371.

We have placed the paper of Dr. Hallowell under this head, because, although prefaced by some general remarks on the subject of tubercle, its main interest is derived from the narration of cases of tubercular meningitis, embracing a very complete summary of their post-mortem appearances. It is a pleasure, amid so many hurried and incomplete descriptions of autopsies, especially of the brain, as we have had to look over in preparing this record, to arrive at such accurately examined cases. In the first case, there was a considerable quantity of yellowish tuberculous matter deposited around the commissures of the optic nerves, with opacity and thickening of the arachnoid in this spot. Beneath the arachnoid, upon the upper surface of the brain, were observed a very considerable number of opake yellowish granulations; they followed the course of the vessels, and were most abundant in the fissure of Sylvius. In the second, third, and fourth cases, a yellowish deposit also existed, surrounding the commissure of the optic nerves. Upon the surface of the left ventricle, in one case, were observed a number of yellowish deposits, similar in appearance to those upon the base of the brain. Effusion into the ventricles is frequently mentioned; and, on the whole, the post-mortem examinations agree with the pathological appearances which the continental observers consider as belonging to tubercular meningitis.

Dr. Thayer illustrates the pathological difference between softening of the brain around an apoplectic clot, and that which occurs under other circumstances. The cases which Dr. Cock has detailed are worthy of a careful perusal. Especially interesting is the case of gangrene of the brain. It occurred in a person, aged twenty-two, who had had a discharge from his ear for several months. Just over the ventricles the brain was softened so much as to rupture, and permit the exudation of their contents. A dirty, greenish, sero-purulent fluid filled both cavities, and had imparted a dark-green color to the walls of the ventricles, which tint extended about a line in depth. The next incision on the right side, after opening the ventricles, revealed a dark-green mass, in size three inches by two, resembling in appearance and odor a gangrenous lung; the smell, though very fetid, was not quite as pungent as pulmonary gangrene. This dark portion had a well-defined edge, which seemed elevated, and around its border the cerebral tissue was soft.

Examinations of cases of tetanus are not so frequent as to preclude the necessity of stating the appearances in an autopsy made by Dr. E. P. Bennett* on a lad of thirteen, in whom tetanus set in after a lacerated wound of the hand. The venous circulation was deeply congested, the inner surface of the dura mater was of a deep rose-color, and in places slightly adherent to the pia mater, which was highly injected, especially the portion covering the pons varioli, medulla oblongata, and spinalis; the cord was of a rose-color. The theca vertebralis was highly injected, and adherent to the pia mater by a copious plastic effusion. The author regards this case as one of tetanus, caused by an inflammation of the medulla oblongata and spinalis.

The report of Dr. Samuel Kneeland on idiotic crania, idiocy, and cretinism, is not only interesting to the psychologist and phrenologist, but has points of interest to the pathological anatomist. It contains some extremely valuable measurements of skulls of idiots and of hydrocephalic heads, to which our limits do not permit us more than to refer.

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* New York Medical Journal, vol. vi., 1851.

DIGESTIVE SYSTEM APPARATUS.

Charles M. Allin.—"Retro-pharyngeal Abscess, its Medical History and Treatment, with a Statistical Table of Fifty-eight Cases;" New York Journ. of Med., vol. vii., 1851, p. 307.

John A. Lidell.—"Upon Acute Gastritis, with Cases;" New York Journ. of Med., vol. x., 1852, p. 211.

Jonathan Kneeland.—"Cases of Cancer Occurring in the Abdominal Viscera, with Remarks;" New York Journ. of Med., November, 1853.

Samuel Kneeland, Jr.—"Cases of Fistula Communicating with the Gall-bladder;" Am. Journ. of Med. Science, April, 1855.

F. V. L. Brokaw.—"Dysenteric Ulceration and Sloughing of the Mucous Membrane of the Intestines as a Cause of Abscess of the Liver;" St. Louis Med. and Surg. Journ., November, 1857.

J. Da Costa.—"Cancer of the Pancreas;" Proceedings of the Pathological Society of Philadelphia, vol. i. p. 109; or North American Medico-Chirurgical Review, September, 1858.

Pharynx and Œsophagus.—In a carefully prepared paper, Dr. Charles M. Allin has discussed the formation of abscess between the posterior wall of the pharynx and the cervical vertebræ. The paper is not limited to the morbid appearances, but furnishes a complete summary of the subject in its various relations. We have introduced it here, because the table records the post-mortem phenomena, for the most part, in a very concise manner. In the chronic variety, one of the causes is scrofulous disease of the vertebræ, which, in the cervical region, is ordinarily confined to the articular surfaces. For this reason, in long-continued cases, in which the abscess has been opened and the disease has not been arrested, dislocation of the vertebræ may take place, and death be the result of laceration, or compression of the spinal cord.

Tongue.—An examination of cancerous disease of the œsophagus is communicated by Dr. Ware. The disease extended from the top of the arachnoid cartilage to the lower extremity of the thyroid gland.*

Stomach.—The occurrence of acute gastritis as an idiopathic affection is, it is hardly necessary to state, considered by all writers as exceedingly rare. Dr. Lidell has met with five instances. They all presented the post-mortem appearances which are usually admitted to belong to inflammation of the stomach, but as they were cases of sudden death, which the coroner was called upon to investigate, their histories are not so perfect as to justify us in concluding that they were all cases of acute idiopathic gastritis. They are, nevertheless, an interesting contribution to this obscure subject. A form of disease of the stomach, not common, has been noticed by Dr. J. B. S. Jackson.† The organ was contracted, thick, and fleshy to the feel externally; the disease extended to every part of it, but not beyond the orifices. The muscular coat was very much thickened, but had scarcely the density of scirrhus. The submucous cellular membrane was thickened, but not uniformly so, the result of which was that the inner surface of the organ was thrown into prominences or knobs; the mucous membrane was generally dark, and at the elevated portions decidedly red. In the large curvature was an ulcer about an inch in diameter, with defined, thick, and firm edges, and penetrating through the whole thickness of the organ.

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* Am. Journ. of Med. Science, April, 1854.

† Records of the Boston Society for Medical Improvement; Boston Med. and Surg. Journal, vol. lii., 1855, p. 416.

Liver.—The proportion of fat in a *fatty* liver* is estimated by Dr. John Bacon, Jr., as equivalent to 53·13 per cent. In the specimen examined, the whole liver contained about five pounds five ounces of fat, solid at the ordinary temperature, but melting at about 98° F., into nearly transparent oil, which became quite clear at 110° F. Stearine, margarin, and olein were present in it; probably also a little cholesterine. Dr. A. Clark† regards the character of the deposit in *waxy* liver as resulting from a new production of a peculiar nature, and is not disposed to coincide with the view of Bennett, that it is a late stage of fatty degeneration. In order to ascertain, if possible, the character of this deposit, whether it be a peculiar form of fatty degeneration, or whether the reaction of chemical agents be the same as upon animal tissue, he tested sections of the part containing the cells, with rectified sulphuric ether, in expectation of their dissolving. No change whatever was produced. He then employed boiling ether, but still no change was effected. They were next treated with strong acetic acid; this seemed to render the cells more transparent, but they remained entirely unchanged in form. Maceration with boiling alcohol produced no change, though it reduced the sections to the consistence of alcohol. Finally they were treated with nitric acid of various strength, and it was observed that when the acid was sufficiently strong to dissolve animal fibre, they did change, but when it was of less strength they did not, which proved the deposit to be of an animal nature. This opinion does not accord with one that has been since expressed by Virchow, that these waxy livers are really amyloid degenerations.

New formations in the liver of a fibro-plastic nature, are mentioned by Dr. Christopher Johnson.‡ *Cysts* from the liver, coughed up from the pulmonary passages, were exhibited at the Pathological Society of Philadelphia.§ Drs. Sayre and Clark have placed on record cases of melanotic *cancer* of the liver. Drs. Griscom and Levick relate‖ a very interesting case of melanotic cancer of the liver, in which also the various thoracic and abdominal organs, including the supra-renal capsules, were melanotic, without any external evidence of the disease being present.

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* Boston Society for Medical Improvement; Am. Journ. of Med. Science, April, 1854, p. 355.

† Proceedings of the New York Pathological Society; New York Journ. of Med., September, 1854.

‡ Medical Examiner, April, 1854.

§ Proceedings, p. 35.

‖ Transactions of the College of Physicians of Philadelphia; Am. Journ. of Med. Science, April, 1858.

Abscesses of the liver following dysentery, are mentioned by J. T. Metcalfe.* Dr. Brokaw's paper on the subject is very conclusive. In twenty-seven fatal cases of dysentery, in which he made post-mortem examinations, there were abscesses in the liver in twenty-two. In fifteen of these cases the dysentery was of a chronic form, and the large intestines in all were more or less ulcerated and thickened. In some of the worst cases there was slight ulceration of Peyer's glands near the termination of the ilium, and the mucous membrane of the large intestines was most extensively ulcerated throughout its entire extent, while in the less aggravated cases there were only a few small ulcers in the rectum, sigmoid flexure of the colon and cæcum. In the acute form, the mucous membrane of the large intestines was in several cases almost entirely destroyed by sloughing; the abscesses were not circumscribed by lymph, were quite numerous, and varied much in size. Ten out of the twenty-two cases had suffered from intermittent fever at a time previous to their admission into the hospital with dysentery. The author adds the twenty-two cases of hepatic abscess which he has examined to the seventeen mentioned by Budd, and the twenty-nine of Annesley, and finds that in fifty-five of these sixty-eight cases there was ulceration or sloughing of the mucous membrane. The abscesses, he agrees with Budd, have their origin in contamination of the portal blood. Instances of abscesses of the liver discharging through the lungs, are mentioned by Drs. Jackson† and Morehouse.‡

Gall-bladder.—Dr. Morton§ has reported a case of fistula of the gall-bladder in a female aged sixty-five. A tumor formed over the liver, and opened near the twelfth rib, about four inches from the median line; the discharge continued from the fistulous orifice until her death. The gall-bladder was found firmly attached to the walls of the abdomen, and completely blocked up by gall-stones. The fistulous orifice led from the gall-bladder through the parietes of the abdomen, and opened at the point above mentioned. Dr. Samuel Kneeland, in his instructive paper on fistulæ of the gall-bladder, places on record several cases of fistulæ of the gall-bladder, and then examines into those which have been reported in the different periodicals. The opening in a case he had under observation, had irregular edges, and was situated about two and a half inches above, and four inches to the right of the umbilicus. Seven calculi were passed through it, composed principally of cholesterine. A rupture of the gall-bladder occurred in the practice of Dr. S. H. Freeman.‖

Intestines.—Attention is directed by Dr. Jackson¶ to an affection of the internal follicles in young children who have died of acute diseases, such as convulsions, the exanthemata, croup, and pneumonia. The swelling and redness are especially marked in the glands of Peyer.

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[*] Proceedings of Path. Society of New York; New York Journ. of Med., vol. iv., 1850; Proceedings of Path. Society of New York. 1857.

[†] Boston Medical and Surgical Journal, January, 29, 1857.

[‡] Proceedings of Pathological Society of Philadelphia, vol. i. p. 56.

[§] Proceedings of Pathological Society of Philadelphia, p. 5; North American Medico-Chirurgical Review, January, 1858.

[‖] Boston Medical and Surgical Journal, November 26, 1857.

[¶] Boston Society for Medical Improvement; Am. Journ, of Med. Science, April, 1852, p. 352.

In a patient who died after one week's illnes, Dr. Storer* discovered gangrene of the appendix cæci, which contained within its cavity an oblong oval mass of hardened fæces, with several short pieces of hair running through it; no perforation had taken place. Another instance of gangrene of the vermiform appendix is related by Dr. J. M. Warren; the appendix vermiformis was found perforated at both ends, and contained in its central portion, a mass of indurated fæces. The appearances of the gangrenous part are unfortunately not particularly described, and room exists for doubt as to the destruction of tissue really having been gangrenous, or as to the cases being different from the ordinary ulceration of the process met with, and such as we find noticed by Dr. Sands† and other practitioners.

Dr. F. F. McElrath‡ describes a cancerous tumor of the cæcum, embracing portions of the ascending colon and of the ileum.

Pancreas.—In Dr. Jonathan Kneeland's remarks on cancer of the abdominal viscera will be found the description of a case of cancer of the pancreas. Further cases have been reported by Drs. Da Costa,§ Agnew,‖ and Demme.¶ The former has also, in a paper on cancer of the pancreas, given its morbid anatomy and clinical history, based on the recorded cases of this affection.

Concretions have been found in the pancreatic duct by Dr. McCready,** consisting of mixed phosphate and carbonate of lime. The mass was over one-third of an inch in diameter, and above an inch long. The patient died of albuminuria. Simple induration of the organ, resembling malignant disease, is described by Dr. Clark;†† an interesting lesion of the pancreas produced by a gall-stone obstructing the pancreatic duct, by Dr. Pepper.‡‡

Among the affections of the *peritoneum* we shall merely cite here an encephaloid tumor attached to the peritoneum and to the vertebræ, weighing thirty pounds, recorded by Dr. Watkins.§§

CIRCULATORY APPARATUS.

Bennett Dowler.—"Fragmentary Notes on Pathological Anatomy;" New Orleans Med. and Surg. Journ., September, 1856, continued to several numbers of 1857.

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* Boston Society for Medical Improvement; Am. Journ. of Med. Science, January, 1581; Ibid., October, 1851, p. 368.

† American Medical Monthly, October, 1857, p. 238.

‡ New Orleans Medical Journal, May, 1858.

§ Proceedings of Pathological Society of Philadelphia, p. 8.

‖ Ibid., p. 84.

¶ Medical and Surgical Reporter, November, 1858,

** Proceedings of Pathological Society of New York; N. Y. Journ. of Medicine, January, 1856.

†† Ibid., September, 1854.

‡‡ Am. Journ. of Med. Science, January, 1857.

§§ New York Journal of Medicine, vol. v. p. 337; Proceedings of New York Pathological Society.

Heart.—Dr. Bowditch* has met with a rare form of cardiac disease—concentric hypertrophy. An unusual affection of the valves consisting in a slit in the pulmonary valves, is described by Dr. A. Clark.† One of the folds of the valves was torn in two places; the lesion did not seem to be recent. A firm clot had insinuated itself into these openings, and completely filled them. A fatty condition of the heart is described by Dr. Macgibbon,‡ in which free oil is stated to have been found in the blood. The blood corpuscles under the microscope, were much broken down. Air also was present in the blood. Unfortunately it is not definitely stated that the blood, besides that in the heart, yielded oil, and it is by no means certain, from the report, that the oil was not derived from the heart itself during the examination, as might so easily have happened. An instance of cancer of the pericardium and heart is recorded by Dr. Ellis.§

A specimen of dilatation of the left ventricle at one point, is described by Dr. Jackson|| as a true aneurism of the heart. A slight enlargement only could be perceived externally. Internally the sac was of a circular form, measured about three inches in diameter, and contained coagula that had evidently formed before death. The muscular substance was yellowish-white, and was found to be fatty. The same author¶ describes two specimens of malformations of the heart, in one of which an opening existed between the two auricles, more than half an inch in diameter.

Dr. Carter P. Johnston** has figured a heart in which the aorta took its origin from the right ventricle, and the pulmonary artery from the upper and posterior portion of the cavity of the left ventricle by a free and patulous orifice. With the exception of its orifice, and the consequent changes produced in the first portion of its course, the distribution of the aorta was normal. The child had been cyanosed to a greater or less extent from its birth. A heart with an interventricular opening is described by Dr. Cabot.†† The organ was obtained from an adult twenty years of age. The opening between the two ventricles was sufficiently large to allow the tips of the two fingers to pass through. The pulmonary artery had two well-developed valves. The passage to it, from the right ventricle, to the extent of half an inch or more from the free edge of the valves, was very much contracted. Dr. Darrach also describes a heart in which the two ventricles communicated.‡‡ Dr. Leigh§§ speaks of a specimen in which but one auricle and one ventricle existed, with a well-developed valve between the

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* Boston Society for Medical Improvement; Am. Journ. of Med. Science, July, 1853.

† Proceedings of the New York Pathological Society; New York Journ. of Med., September, 1854.

‡ Am. Journ. of Med. Science, January, 1856.

§ Boston Society for Medical Improvement; Boston Med. and Surg. Journal, October 2, 1856.

|| Am. Journ. of Med. Science, April, 1850, p. 369.

¶ Ibid., p. 370.

** Ibid., October, 1850, p. 370.

†† Ibid., April, 1854, p. 352.

‡‡ Proceedings of Pathological Society of Philadelphia, p. 53.

§§ Am. Journ. of Med. Science, p. 355.

two cavities. Dr. White* depicts a heart taken from a child thirteen months of age, in which, accompanying an almost fœtal condition of the organ, the interventricular septum was wanting at its upper portion, and the origin of the aorta was situated immediately over it, so as to receive the blood from both ventricles.

Aneurism.—Two cases of aneurism of the aorta, terminating by rupture into the trachea, are reported by W. H. Van Buren.† Intercurrent bronchitis existed in both; in one, nothing but the signs of this were, during life, elicited. The arch of the aorta was, in this case, firmly attached to the trachea over a space nearly an inch in diameter. Two ulcerated openings communicated directly with the cavity of the aneurism. They were partly blocked up by coagula, evidently of long standing. We may mention among the more interesting of the recorded cases of aneurism, one bursting into the trachea, reported by Dr. Minot;‡ into the bronchial tubes, by Dr. Forbes;§ cases rupturing externally, recorded by Drs. Coale‖ and Packard;¶ bursting into the œsophagus, by Dr. McCready.** In Dr. Packard's case, pieces of roughened bone were found within the cavity of the aneurism, evidently remains of the sternum. They were irregular in shape, and eroded. The end of the right clavicle, and the upper two ribs on the same side, were in a similar condition, and projected through the wall of the sac; both sterno-clavicular articulations were absorbed. The sternum above the second rib was entirely gone, except a slender strip which had formed the border on the left side.

Veins.—A very interesting case of ossification and obliteration of the ascending vena cava is detailed by Dr. G. L. Collins.†† The descending vena cava was about the usual size, and distended with blood. The ascending vena cava was of the usual size, and healthy to a point near the origin of the right renal vein, when it became at once impervious, terminating abruptly in a sort of cul-de-sac. Below this point, the vein, for two and a half inches, was converted into a firm cord about two lines in diameter, in the substance of which was a deposit of compact bone, sufficiently firm to arrest the passage of the knife. The vena cava from this ossific deposit to its bifurcation, was converted into a dense impervious cord, as were the common iliac veins, though the latter retained a trace of the tubular form, as a small probe could be passed through them. The patient, a man aged thirty-four, had in addition to this disease of the veins, a large vascular tumor, which occupid a position behind, and a little to the left of the rectum. Dr. Bennett Dowler, in his notes on Pathological Anatomy, and fragmentary notices of the most various lesions and condition, commented upon in the author's peculiar style, forcibly draws attention to the occurrence of air in the veins and in different organs, wholly independent of post-mortem putrefaction and traumatic lesions.

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* Buffalo Medical Journal, July, 1855.

† Proceedings of New York Pathological Society; New York Journal of Medicine, vol. v., 1850.

‡ Am. Journ. of Med. Science, July, 1850, p. 29.

§ Proceedings of Pathological Society of Philadelphia, vol. i. p. 64.

‖ Am. Journ. of Med. Science, July, 1851, p. 75.

¶ Ibid., July, 1858.

** New York Journal of Medicine, March, 1856, p. 267.

†† Am. Journ. of Med. Science, October, 1850, p. 391.

Obstruction of the Deep Jugular Veins.—Dr. Metcalfe[*] relates an instructive case caused by pressure from enlargement of the lymphatic glands. The glands commenced to enlarge after measles, until a swelling, which occasioned intense dyspnœa, extended from the clavicle, on the right side, to the vertex; this steadily increased until the child died. On raising, post-mortem, the skin of the right cervical region, the whole of the subjacent parts were seen to be firmly matted together by fibrous effusion. Where the deep jugular vein was pressed upon, a clot of fibrin was found obstructing the flow of blood in this vessel.

Lymphatics.—Dr. Thomas Gage narrates[†] the history of a patient in whom the sole lesion, after death, was found to consist in primary encephaloid disease of the lymphatic glands of the abdomen. All the organs of the thorax and abdomen were perfectly healthy.

DUCTLESS GLANDS.

Jas. J. Waring.—"Report of Three Cases of Ruptured Spleen, with Remarks on the Different Organic Changes which give rise to this Lesion, and the Different Modes in which it may occur;" Am. Journ. of Med. Science, October, 1856.

Isaac E. Taylor.—"On Supra-renal Capsular Disease;" New York Journ. of Medicine, September, 1856.

Spleen.—Dr. Theophilus Mack[‡] describes a rupture of the spleen from what is supposed to have been sudden hyperæmia; the appearances of apoplexy were found in the organ. The whole subject of rupture of the spleen is treated in its various relations by Dr. Jas. J. Waring. In one of the cases he reports, the spleen was healthy, and simply engorged; while in two others the organ was of unusual size and thickness, extremely firm in structure, and remarkably brittle. An instance of enlargement of the liver and spleen, with concrete pus in the heart, (leucocythæmia?) is mentioned by Dr. Bowditch.[§] The blood in a case of enlargement of the spleen was examined by Dr. Addinell Hewson.[||]

Supra-renal Capsules.—The post-mortem appearances in several instances of disease of the supra-renal capsules, have been described by American practitioners; among them we may mention a case by Dr. Gould,[¶] and an interesting paper, in which several cases are recorded by Isaac E. Taylor.

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[*] Proceedings of New York Pathological Society, in New York Journal of Medicine, 1850, vol. i. p. 37.

[†] Boston Society for Medical Improvement; Am. Journ. of Med. Science, April, 1854.

[‡] Am. Journ. of Med. Science, January, 1857, p. 27.

[§] Ibid., July, 1857.

[||] Ibid., October, 1857.

[¶] Boston Med. and Surg. Journal, July 16, 1857.

DISEASES OF THE RESPIRATORY ORGANS.

W. Parker.—"Polypus Laryngis;" New York Journ. of Med., vol. vii. 1851.

J. Forsyth Meigs.—"Remarks on Atelectasis Pulmonum, or imperfect Expansion of the Lungs, and Collapse of the Lungs in Children;" Am. Journ. of Med. Science, Jan. 1852.

J. Da Costa.—"An Inquiry into the Pathological Anatomy of Acute Pneumonia;" Am. Journ. of Med. Science, Oct. 1855.

Henry J. Bowditch.—"Peculiar Case of Diaphragmatic Hernia, to which is added an Analysis of most, if not all, of the Cases of Diaphragmatic Hernia found recorded in the Annals of Medical Science;" BuffaloM ed. Journ., June, 1853.

Larynx.—Dr. Parker, in giving the history of two cases of polypus of the larynx, describes their structure, and alludes to similar cases noticed by authors. One attached to the epiglottis is reported by Dr. H. Green;* in another case the microscopical appearances are stated, by Dr. W. J. Burnett,† to have consisted of fibrous tissue, and large numbers of pavement epithelial cells folded in it. In both of Dr. Parker's cases the polypi caused death by suffocation. One was of the kind designated as mucous polypus; the other consisted in a cluster of warty excrescences, which, doubtlessly, if examined with the microscope, would have shown epithelial formations of the same structure as in the specimen investigated by Dr. Burnett.

An unusual form of laryngitis is mentioned by Dr. Jackson.‡ The entire lip of the glottis, upon the left side, was very much swollen, fleshy to the feel, and of a bright-red color, except upon the summit, where there was a defined, brownish, soft slough, three or four lines in diameter. The subjacent tissues were either of a deep-red color or yellow from the infiltration of something resembling very thick pus. The lip of the glottis upon the other side was perfectly healthy. A cancerous tumor of the larynx is reported by Dr. Bowditch.§ It was the cause of death, and was found to occupy the right ventricle of the larynx, and to project downward into the trachea about half an inch. It had arisen in the cellular structure between the cartilages, but had not involved them. Further instances of laryngeal diseases will be found mentioned in the various contributions to the subject which Dr. Horace Green, of New York, has, of late years, published.‖

Lungs.—Dr. Meigs's Essay on Atelectasis and Collapse of the Lungs, although more a clinical than a pathological paper, embraces the description of several post-mortem investigations of this affection, and may be regarded as an interesting addition to this as yet unsettled subject.

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* New York Journ. of Med., vol. vi. p. 22.

† Am. Journ. of Med. Science, July, 1855, p. 37.

‡ Am. Journ. of Med. Science, p. 367, April, 1850.

§ Boston Med. and Surg. Journ., May, 1858.

‖ Among them "Treatment of Polypi of the Larynx;" New York, 1852.

Dr. Da Costa has investigated the morbid anatomy of acute pneumonia. He describes the lung as seen in the first stage, and depicts its appearance under the microscope. It does not differ much from congested lungs, excepting in containing numbers of exudation corpuscles. He concludes, from chemical analyses of lungs which were congested, that, in the stage preceding red hepatization, the amount of fat is increased. As the result of minute examinations, he states that the exudation is almost entirely confined to the air-cells, and regards the third stage, not as it is commonly supposed, as a suppuration, but believes that, in many cases, it is a gradual breaking up of the exudation, and secondarily of the lung tissue, allied perhaps to fatty degeneration, but not very frequently of a suppurative nature. A question requiring to be solved, and which he answers in the affirmative, is, "May a variety of exuded lymph give to the eye the peculiar yellowish appearance of the third stage, and yet not have been preceded by red hepatization?" He believes that cases of this yellow condensation occur, which form a distinct pathological species of consolidation, and which have been incorrectly classed as the third stage of pneumonia. Under the microscope they exhibit no elements indicative of suppuration, indeed slight traces of any degeneration, but distinct nucleated cells of varying shapes, and a homogeneous basis substance in which the cells are imbedded.

An instance of very extensive abscess of the lung is recorded by Dr. W. Spencer.*

Morbid growths in the *pleura* are mentioned by Dr. Woodward in the paper above alluded to, while a large fibro-nucleated tumor filling the left pleural cavity is well described by Dr. Storer.†

Of the more uncommon diseases of the thorax, we may refer to Dr. Finnell's specimen of *diaphragmatic hernia.*‡ The stomach was found, in the left pleural cavity, pushing up the lung as high as the third rib, and crowding the heart to the right side. In Dr. Bowditch's complete and elaborate paper will be found a most interesting instance of a diaphragmatic hernia which had existed in a man who died at the Massachusetts General Hospital, with fracture of the spine, caused by a heavy blow upon it. The whole left side of the diaphragm was found wanting. The stomach and a great part of the intestines lay in the left pleural cavity, compressing the left lung, and forcing the heart to the right side of the sternum. The analyses of cases recorded by authors, which is added to the description, makes this contribution extremely valuable.

URINARY ORGANS.

Stephen Smith.—"Contribution to the Statistics of Rupture of the Urinary Bladder, with a Table of Seventy-eight Cases;" New York Journ. of Med., vol. vi., 1857.

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* Cincinnati Medical Observer, August, 1857.

† Boston Med. and Surg. Journ., May, 1858.

‡ Proceedings of Path. Society of New York; New York Journ. of Med., Jan. 1856, p. 81.

William J. Burnett.—"The Microscope and Renal Affections, and particularly that Condition of the Kidney known as Bright's Disease;" Am. Journ. of Med. Science, October, 1851, p. 373.

Charles Fricke.—"Remarks on the Relation of the Dumb-bell Crystals to Uric Acid;" Am. Journ. of Med. Science, July, 1850.

John Bacon, Jr.—"Observations on the Dumb-bell Urinary Deposit;" Am. Journ. of Med. Science, April, 1851.

John C. Dalton, Jr.—"On a New Form of Phosphate of Lime in Crystals, as it occurs in Putrefying Urine;" Am. Journ. of Med. Science, April, 1851, p. 368.

John T. Plummer.—"On Dumb-bell Forms in Urine;" Am. Journ. of Med. Science, Oct. 1853.

George W. Miltenberger.—"Creatine Spontaneously Deposited in Oxaluria;" Med. Ex., Jan. 1855.

J. Cheston Morris.—"Creatine in the Urine;" Med. Ex., Sept. 1855.

S. Weir Mitchell.—"Observations on the Generation of Uric Acid, and its Crystalline Forms;" Am. Journ. of Med. Science, p. 121, July, 1852.

John Bacon, Jr.—"Urinary Deposit of Epithelial Nuclei;" Am. Journ. of Med. Science, Oct. 1852.

Benjamin S. Shaw.—"Crystals of Urate of Potassa in Urine;" Am. Journ. of Med. Science, Oct. 1853, p. 381; and "A Peculiar Form of Uric Acid in Urine;" Ibid., p. 382.

The affections of the urinary organs and the urine have received considerable attention from American writers. In addition to the many papers, some of them very valuable, which we have just cited, much interesting information may be obtained on the subject of morbid alterations of the urinary organs from several chapters in the work of Dr. Fricke, and from the Treatise on the Diseases of the Urinary Organs, by Dr. Gross. A volume on Urinary Affections has also recently been published, by Dr. Morland, of Boston. We may further refer with some pride, to the many excellent communications on the subject of calculi, which the surgeons of this country have made to the profession.

Kidney.—On the field of urinary pathology we meet again with Dr. W. J. Burnett, whose name we have had occasion to introduce more than once, and whose early death has occasioned that profound regret always experienced when one arduously devoted to science is cut short in a career which promised to be so brilliant. Dr. Burnett describes *Bright's disease* as decidedly inflammatory; it is primitively, he thinks, an acute or subacute nephritis, and of a uniform character. His remarks are on the side of those who believe in the unity of Bright's disease, and throughout his essay he takes an opportunity of inculcating what every practical pathologist must admit, how unreliable is the examination of the kidney with the naked eye. Some of the cases illustrate the occurrence of fatty liver with Bright's disease, although the kidneys were almost free from fat; and also of fatty kidney without Bright's disease; and the author takes, therefore, decided ground against those who think that the different appearances witnessed in Bright's disease are indicative of separate and distinct affections.

Of the rarer forms of disease of the kidney, we may cite a well-marked instance of cancer of the kidney, reported by Dr. J. C. Foster.* The kidney, in a case reported by Dr. Busch,† communicated with the external parts, owing to the presence of renal calculi, which were discharged through the lumbar region.

A rare malformation of the kidney, single kidney, is described by Dr. Morton, and interestingly commented upon by Dr. Harris.‡

Bladder.—A specimen of gangrene of the bladder was exhibited by Dr. Hall, at a meeting of the Pathological Society of Philadelphia, October 20th, 1857.§ The gangrene followed over-distension of the organ, which was found very much dilated, and filled with decomposed intensely alkaline urine, mixed with blood. The mucous membrane was soft and of a dark-red color; at one portion were several striated eschars, and around these small depressions; the membrane was of a greenish-gray or bronzed color; here and there were spots of ecchymosis.

Dr. Smith has collected together, in an elaborate paper, seventy-eight cases of rupture of the bladder, including the one published by Dr. Kneeland.‖ We must refer to the paper itself for the morbid appearances. They are tabulated, and thus easy of reference. By far the most frequent seat of rupture is in the posterior walls. Cancer of the bladder is described by Dr. Jackson¶ and by Dr. Hodges.**

Urine.—Dr. Fricke, in the paper quoted, differs from Golding Bird, as to the composition of dumb-bell crystals, and comes to the conclusion that they are not, as has been stated, oxalate of lime, but really transformed crystals of uric acid. "If," says our author, "oxalic acid and lime be added together, the crystals formed under these circumstances are always double pyramids, although at times so small as to be scarcely perceptible; and however long the deposit be allowed to remain, neither dumb-bells nor ovals are ever found to make their appearance. If a deposit, consisting entirely of uric acid, be carefully washed, and clear water added, we may discover, in a certain number of cases, after the lapse of a few days, that dumb-bells are present, indicating, beyond a doubt, their formation from uric acid without the addition of lime."

Dr. John Bacon, on the other hand, in an elaborate and exceedingly valuable paper, has proved, by chemical experiments, that the dumb-bells consist of a salt of lime, convertible by a moderate heat into the carbonate, and that the lime is combined either with oxalic acid, or an organic acid nearly related to it.

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* Proceedings of Path. Society of New York; New York Journ. of Medicine, Jan. 1853, p. 59.

† Proceedings of Path. Society of New York; Am. Med. Monthly, Sept. 1857, p. 184.

‡ Proceedings of Path. Society of Philadelphia, vol. i. p. 79.

§ Proceedings, p. 6, vol. i., or North American Medico-Chir. Review, January, 1858.

‖ New York Journ. of Med., March, 1851.

¶ Boston Med. and Surg. Journ., Jan. 1857.

** Ibid., May, 1858.

He also proves that properly prepared oxalate of lime is soluble in strong acetic acid, and that it, when rapidly deposited from solution, affords zeolitic forms similar to those obtained from the dumb-bells. By the action of polarized light these latter exhibit concentric-colored bands, traversed by a dark cross. Although the octohedra of oxalate of lime do not act on polarized light, the prismatic crystals of this salt, which abound in various plants, possess strong polarizing power. He regards the dumb-bells as made up of very slender prisms, and not of lengthened octohedra, as Dr. Bird supposes, and is inclined to the belief that the oval bodies which this observer has described, are dumb-bells seen endwise; they show with polarized light one or two almost circular rings near the centre, and an oval band near the outside. The conclusion of this valuable paper, while it refutes the opinion of Dr. Fricke, strengthens the views of Golding Bird, as the dumb-bell crystals are stated to consist "of a salt of lime, containing either oxalic, oxaluric, or perhaps some other organic salt easily converted into the oxalic; but the exact nature of the acid remains to be determined by future investigation."

Dumb-bell forms, hovever, have been found in the urine, which were, as far as the chemical tests indicated, not oxalates. In the urine of a man crippled with chronic rheumatism, Dr. Plummer saw dumb-bell crystals, which, on chemical analyses, he believed to have been, unquestionably, sulphates. In the course of his experiments oxalate of soda dumb-bell crystals were artificially produced.

Dr. Miltenberger's observations have demonstrated the occasional presence of creatine in the urine of persons suffering from oxaluria; and Dr. Cheston Morris testifies to its occurrence in a man who had suffered under the phosphatic diathesis for nearly three years.

Dr. Fricke* speaks of a specimen of black urine.

Dr. John C. Dalton has described radiated crystalline bundles of phosphate of lime in urine that has been standing for some days.

Dr. Mitchell, in his paper on uric acid, notices the various forms of this substance, especially the larger-shaped crystals. He speaks especially of the curves on the lozenges, which he regards as furnishing the key to those upon the tabular variety, and comes to the conclusion "that these are in fact large lozenges, of no great thickness, but having an oblong or square surface, on which are seen the marks of their primitive form, and around which the circular crystals have collected, clothing it completely." A peculiar form of uric acid crystals, and also of crystals of urate of potassa is depicted by Dr. Shaw.

Dr. John Bacon describes a urinary deposit consisting of epithelial nuclei. The deposit formed in the urine has some resemblance to a purulent sediment, but is darker and more readily diffused. The urine was voided by a patient in the early stage of albuminuria. The bodies are nearly, if not quite, spherical; their surface is generally smooth, and they contain several dark granules with bright centres. They are less transparent than pus globules, and not affected by acetic and nitric acid.

Urinary Calculi.—Among the rarer forms of urinary calculi we have met with in looking over the different medical periodicals, we may cite the stellate calculi depicted by Drs. Mitchell[*] and Darrach;[†] a large calculus, with a head of wheaten-straw for a necleus, recorded by Dr. W. H. Van Buren;[‡] and one with a hair-pin for a nucleus, by Dr. Wheeler.[§]

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* Proceedings of the Baltimore Path. Society; Virginia Med. Journ., Feb. 1857.

GENITAL ORGANS.

Scrotum.—Dr. J. M. Warren[‖] exhibited, at the Boston Society for Medical Improvement, four tumors removed from the scrotum of a man fifty-six years of age. They had been growing for twelve years, and on a careful examination were found to have a fatty structure, and to embrace the spermatic cord; the vas deferens was traced in its whole length passing through the centre of the mass.

A bony tumor of the scrotum taken from a Chinese, has been described by Dr. Kerr.[¶] The mass closely resembled the upper maxillary bones placed in apposition, and on minute examination was found to contain bone corpuscles.

An ossified hydrocele sac was presented by Dr. Finnell to the Pathological Society of New York.[**] Dr. Ellis[††] has met with calcareous concretions in the scrotum, which, on analysis, were found to consist of phosphate and carbonate of lime, with considerable organic matter. An enormous cancerous *testicle*, weighing six pounds six ounces, is mentioned by Dr. J. A. Swett.[‡‡]

Ovaries.—Professor Gilman[§§] describes a specimen of ovaritis removed from the body of a patient fourteen days after the occurrence of puerperal mania. The symptoms of the mental affection commenced with indications of derangement of the genital functions. No disease was discovered excepting enlargement and intense congestion of the right ovary. A similar case was communicated to Prof. Gilman by Dr. Barker of Connecticut.

In an ovarian cyst Dr. Hooker[‖‖] has met with teeth, six in number, and set in a piece of bone about three-fourths of an inch in length. The soft parts immediately about the bone closely resembled the gum; the surface was covered with epithelium. Dr. J. L. Jones[¶¶] describes hair in an ovary which had been transformed into a calcareous mass. A colloid disease of the right ovary is reported by Dr. Perry,[***] and was microscopically examined by Dr. H. J. Bigelow.

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[*] Proceedings of Path. Society of Philadelphia, p. 27, or North American Medico-Chir. Review, March, 1858.

[†] Ibid., p. 31.

[‡] Proceedings of Path. Society of New York; New York Journ. of Med., 1850, vol. iv. p. 323.

[§] Am. Journ. of Med. Science, April, 1853.

[‖] Ibid., April, 1850.

[¶] North American Medico-Chirurgical Review, January, 1858.

[**] American Medical Monthly, February, 1857, p. 113.

[††] Boston Med. and Surg. Journal, June 18, 1857.

[‡‡] New York Journal of Medicine, 1850, p. 35.

[§§] Proceedings of the New York Pathological Society; New York Journal of Medicine, 1851, vol. vi. p. 41.

[‖‖] Am. Journ. of Med. Science, April, 1854, p. 361.

[¶¶] New Orleans Med. News, February, 1858.

[***] Am. Journ. of Med. Science, January, 1855, p. 50.

It is not necessary to notice further the affections of the female organs of generation, as they will be fully reported upon in the report on obstetrics and diseases of women: we would merely indicate in passing, a specimen of *imperforate vagina* occurring in an unmarried female, detailed by Dr. J. B. S. Jackson.* The uterus and vagina were immensely distended. A fleshy mass of about half an inch in thickness separated the vagina from the vulva, and was the cause of the occlusion. The vagina was found cancerous by Dr. Minot.† Dr. Markoe‡ has described a fibrous cellular tumor of the anterior wall of the vagina.

BONES AND JOINTS.

Wm. S. Bowen.—"Cases of Softening of Osseous Tissue, with Remarks;" New York Journal of Medicine, vol. v., 1850.

Buckminster Brown.—"Report of a Case of Extensive Disease of the Cervical Vertebræ, with Remarks on this and some other Forms of Carious Disease of the Spine;" Am. Journ. of Med. Science, January, 1853.

Louis Bauer.—"A Critical Examination of a Pathological Specimen of Softening of the Inter-vertebral Cartilages;" New York Journal of Medicine, May, 1854.

Thomas M. Markoe.—"Chronic Sinuous Abscess of Bone;" New York Journal of Medicine, May, 1858.

Dr. Bowen has described several specimens of softening of bones of the leg and of the foot. The bones were so much softened and altered in structure, as to admit of easy division with the scalpel. A section liberated a large quantity of oil. In one of the tarsal bones this was very prominent; there was rarefaction of the cellular structure of the bone, and the enlarged cells were filled by a deposition of fatty matter, leaving thus but a very thin crust of sound bone. The cartilages were not in any of the cases materially affected. Dr. Bowen believed that the bones were chemically unaltered, and that the softening was due to mere attenuation, and perhaps to oily maceration. But as the bones were not minutely examined, this point cannot be regarded as certain. It is very probable that a microscopical examination would have shown a degeneration of the bone structure.

An instance of necrosis of the tibia, followed by spontaneous fracture, is given by Dr. Charles D. Smith.§ The disease had been partly removed, but recurred after syphilis and mercurialization. Specimens of osteoid cancer are described by Dr. H. J. Bigelow.* Dr. A. Clark† presented to the Pathological Society of New York several cancerous bones removed from the same patient. The vertebral column was softened from cancerous disease, from the first dorsal vertebra to the promontory of the sacrum; so were the head and upper part of both femurs.

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* Am. Journ. of Med. Science, July, 1850, p. 27.

† Ibid., July, 1854, p. 88.

‡ Proceedings of Pathological Society of New York; American Medical Monthly, July, 1858.

§ Proceedings of Pathological Society of New York, in New York Medical Journal, vol. v. p. 337.

Dr. Buckminster Brown's case of disease of the cervical vertebræ is as interesting to the physiologist as it is to the pathologist. In a young mulatto, in whom there was total inability to move the head independently of the body; in whom paralysis came on gradually and late in the disease, with extreme emaciation and rigid contraction of the muscles of the extremities; and in whose neck one of the spinous processes had disappeared from its normal position, was found, after death, on the anterior face of the bodies of the cervical vertebræ, the cyst of an old abscess, containing no fluid, but communicating with the rachidian canal between the dura mater and the arachnoid, through an opening formed by the removal of the body of the second vertebra, and which extended from the first to the third. On cutting into the upper part of the cyst, toward the medulla oblongata, a loose piece of carious bone, the size of half a filbert, rolled out of the medullary cavity; another, and larger piece was subsequently found. They were the remnants of the odontoid process, and of the body of the axis, which was almost entirely destroyed. Ascending to the atlas, the disease had destroyed both inferior articulating cartilages, and partially the processes; it had extended anteriorly round the condyles, upward toward the superior condyles, and posteriorly through the left lamina of the posterior arch, breaking entirely through it at one point, and continuing on until it involved the posterior tubercle. In the occipital bone, the right articulating condyle and the basilar process were roughened, and thinned. The occipito-axoid ligament which incloses the odontoid process, was ulcerated through, thus permitting the fragments of this process to find their way into the vertebral column. Softening was further found in most of the cervical vertebræ, and in the medullary substance, from the foramen magnum to the first dorsal. The upper part of the marrow was reduced to a pultaceous, semifluid mass.

A specimen of very extensive disease of the vertebræ is described by Drs. Louis Bauer and Barthelmess.‡ It showed tubercular deposits in the bodies of the thoracic vertebræ, from the fourth to the eleventh. The greatest part of the eleventh dorsal and second lumbar vertebræ, as well as the first lumbar vertebra, had entirely disappeared. The first-mentioned of these authors also reports a very interesting case, tending to confirm the occurrence of idiopathic disease of the inter-vertebral cartilages. These presented, under the microscope, unmistakable marks of textural disintegration and fatty degeneration, but there was no evidence of tubercular matter.

One of the most singular instances of physiological pathology is furnished by Dr. Toland's§ case of whitlow, in the reproduction of bones and joints after their removal. The whole subject of abscess of bone is well handled by Dr. Markoe, both in its surgical and pathological bearings.

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* Am. Journ. of Med. Science, July, 1852, p. 80.

† New York Journ. of Med., March, 1853.

‡ New York Journ. of Med., January, 1854.

§ Charleston Med. Journ. and Review, November, 1857, and July, 1858.

Affections of the Joints.—Dr. W. H. Van Buren[*] has described a deformity resulting from an absorption of the head of the femur. The remains of the cervix were worn smooth on its surface, from contact with a newly-formed substitute for the acetabulum, situated on the dorsum of the ileum, beneath the glutæus minimus muscle which, with the cellular tissue, and the other muscles in its vicinity, had formed a perfect capsule for the new joint. The new acetabulum was not furnished with any coating of articular cartilage, but the portion of the ilium composing it was exceedingly smooth, and was rendered deeper by the deposit of bone around its circumference. The original acetabulum, although diminished in size and altered in shape, still retained its incrusting cartilage and its capsular ligaments.

Descriptions of eburnation of the cartilaginous surfaces of the knee-joint are given by Drs. H. J. Bigelow,[†] Packard,[‡] and Brinton.[§] Dr. A. S. Sawyer[||] describes an osteoid growth connected with the capsular ligament of the right hip-joint.

SKIN, AND ORGANS OF SENSE.

Henry H. Smith.—"Case of Molluscum developed by an Injury, and presenting, under the Microscope, the Characters of Medullary Cancer;" Am. Journ. of Med. Science, Oct. 1851.

Waldo J. Burnett.—"Case of Cheloidea, with some Remarks on Cheloid Growths;" Am. Journ. of Med. Science, Oct. 1853.

Neither in the anatomy of the affections of the skin, nor in the examinations of the organs of special sense, have we many observations to record. The one presents a wide, and, with the exceptions of the labors of Wilson, Simon, and Hebra, as yet an uncultivated field, in its minute details. The researches in this country on the organs of special sense have been chiefly confined to the eye, and will be found in the various American editions of the standard text-books, such as of Lawrence and Mackenzie. Of the rarer instances of affections of the *eye* which the journals record, we may mention a specimen of ossification of the retina described by Dr. Isaacs;[¶] also, instances recorded by Drs.

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[*] Proceedings of the New York Pathological Society; New York Journal of Medicine, 1850, vol. iv. p. 337.

[†] Am. Journ. of Med. Science, April, 1852, p. 353.

[‡] Proceedings of the Pathological Society of Philadelphia, vol. i. p. 15.

[§] Ibid., p. 75.

[||] Am. Journ. of Med. Science, January, 1858.

[¶] Proceedings of Path. Society of New York; New York Journ. of Med., 1851, vol. vii.

Bethune* and Gay, of melanosis of the eyeball; and cases of malignant disease of the eyeball, by Dr. Williams† and James Bolton.‡

An epithelial tumor of the cornea is reported by Dr. Bethune,§ while Dr. John H. Dix‖ depicts a fibro-plastic polypus of the iris, composed almost entirely of elongated fibro-plastic cells and nuclei.

Skin.—The interesting case of *molluscum,* which Dr. Henry H. Smith details, came on after an injury to the skin of the forearm. At first the tumors were confined to the arm, which was amputated, but subsequently they were observed scattered over the body. A microscopical examination made on one of the tumors of the head, removed post-mortem, proved them to be medullary cancer. The disease, in this instance at least, may be viewed as an indication of a marked cachexia, giving rise to the extensive formations of cancerous tumors in the skin.

Dr. Burnett speaks of the microscopical appearances, and of the occurrence of cheloid growths. He found a specimen, which he carefully examined, to consist exclusively of fibro-cellular tissue, which had involved, during the growth and expansion of the disease, a greater or less amount of epithelium—this last appearing in the form of broken-down cells and scales. "In an anatomical point of view, then, this disease is only a fibrous epigenesis of the skin."

AFFECTIONS OF VARIOUS AND UNCERTAIN SEATS.

Lewis Smith.—"Analyses of One Hundred and Thirty-one Cases of Hydrophobia;" New York Journ. of Med., Jan. 1856.

Dr. Smith, in his careful essay on *hydrophobia,* records the post-mortem appearances that have been noticed by different pathologists, but unfortunately they do not throw much light on this strange disease. In a case examined by Dr. Turner,¶ the cerebro-spinal fluid that escaped freely from the foramen magnum was thick and opake like pus; and the investing membranes of the medulla spinalis were seen coated with lymph throughout nearly their whole extent. The lymph was deposited more abundantly on the posterior than on the anterior surface of the cord.

CHOLERA.

"Report of the Committee of the College of Physicians of Philadelphia, appointed to Examine into the Condition of Mucous Membrane of the Intestinal Canal in Persons Dying of Cholera;" Transactions of the College of Physicians of Philadelphia, No. i. vol. iii.

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* Boston Society for Medical Improvement; Am. Journ. of Med. Science, Jan. 1853.

† Ibid., July, 1853, p. 73.

‡ Boston Med. and Surg. Journ., Jan. 1857.

§ Ibid., Jan. 1855, p. 48.

‖ Boston Med. and Surg. Journ., April, 1855.

¶ Stethoscope, Feb. and March, 1854.

W. J. Burnett, M.D.—"Remarks upon the Presence of some Infusoria in the Tissues and Secretions of Patients Dying of Cholera;" Am. Journ. of Med. Science, Jan. 1850.

J. H. Vanderveer.—"Epidemic Cholera as it Appeared at the Franklin Street Hospital during the Summer of 1854;" New York Journ. of Med., Sept. 1855.

A committee, consisting of Drs. Jackson, Neill, Henry H. Smith, and William Pepper, appointed by the Philadelphia College of Physicians, reported on the state of the intestinal mucous membrane, in persons dying of cholera, as follows:—

"In the recent subject, the peritoneal coat, like all the serous membranes, was in all remarkably dry. The lubricating serosity is deficient in the serous membranes.

"The epithelial layer of the mucous membrane was, in all the specimens, either entirely removed or was detached, adhering loosely as a pulpy layer mixed with mucus or an albuminoid substance.

"Peyer's glands were developed to a greater or less extent in all the cases examined.

"The solitary glands were also developed, and contained, in the recent subject, a minute quantity of white substance.

"The villi are denuded of the epithelial covering, but are unchanged in other respects.

"The capillary vessels are entire, and manifest no departure from their normal state."

Dr. Holmes* mentions that in one case of cholera, in which there was suppression of urine, he had discovered distinct crystals, having the exact forms of those of lithic acid; and Dr. W. Burnett, in the paper above quoted, describes the infusoria met with in persons dying of cholera; they were almost always present in the urine of nearly forty patients, but only rarely, as far as could be ascertained, in the tissues. In the seventy-eight autopsies spoken of by Dr. Vanderveer, the usual appearances found in cholera were noticed; in addition, it is stated that, in many instances the collection of serum in the ventricles was very great; in some, three ounces of serum were found in the ventricles alone, independent of what was collected between the pia mater and arachnoid membrane, and in the cranium.

FEVERS.

J. B. Upham.—"Cases of Maculated Typhus or Ship Fever," (with plates;) New York Journal of Medicine, July, 1852.

Austin Flint.—"Clinical Reports on Continued Fever," pp. 126, 230, and 339, *et seq.*; Buffalo, 1852.

R. La Roche.—"Observations on the Black Vomit, its Nature and Composition, and its Value in the Diagnosis and Prognosis of Yellow Fever;" Am. Journ.

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* Am. Journ. of Med. Science, July, 1850.

of Med. Science, January and April, 1854; and chapter on this and on Anatomical Lesions in his work on Yellow Fever.

Alonzo Clark.—"On Black Vomit, and on the state of the Liver in Yellow Fever;" New York Medical Times, May, 1853; also page 370 of fourth edition of Bartlett on the Fevers of the United States.

Myddleton Michel.—"Microscopic Researches on the Black Vomit of Yellow Fever;" Charleston Medical Journal and Review, May, 1853.

Thomas Hewson Bache.—"Observations on the Pathology of Cases of Yellow Fever admitted into the Pennsylvania Hospital during the summer of 1853;" Am. Journ. of Med. Science, July, 1854.

Samuel A. Cartwright.—"Post-mortem Examination in the Yellow Fever of Natchez;" New Orleans Med. and Surg. Journal, March and May, 1857.

Alonzo Clark.—"On the Liver in Remittent Fever;" in Bartlett, on the Fevers of the United States, fourth edition, p. 370, and in appendix to Dr. La Roche's work on Yellow Fever.

N. S. Davis.—"On the Changes which take place in the Blood in the Continued Forms of Fever;" Transactions of the Illinois State Medical Society for the year 1857.

W. A. Hammond.—"On the Alterations Induced by Intermittent Fever in the Physical and Chemical Qualities of the Urine, etc.;" Am. Journ. of Med. Science, April, 1858.

Joseph Jones.—"Observations on Malarial Fever;" Southern Med. and Surg. Journal for 1858.

H. M. Stuart.—"An Investigation of the Urine in Remittent and Intermittent Fevers, proving the Hyperphosphatic State of the Blood, also the Eliminating Properties of Quinine;" Charleston Medical Journal, May, 1857.

It will be seen from the number of authors quoted, that the morbid alterations in fevers have received a very considerable amount of attention. Some few vague and theorizing papers have appeared on the subject, but the majority are based on research and careful observation. To render the record more complete, we have introduced matter which, perhaps, more appropriately would have belonged to the different organs we have already examined.

Continued Fever.—In a paper on *typhus* fever, based on a series of observations made during the prevalance of this disease at South Boston and Deer Island Hospitals in 1847 and 1848, Dr. J. P. Upham has carefully depicted the morbid appearances found in the intestine. He describes especially a peculiar intestinal affection, which is to be regarded as secondary, and which commonly makes its appearance during the latter stages of convalescence. Peyer's glands remain unaffected, but the solitary glands are raised, inflamed, and sometimes ulcerated. In the small intestine, especially the ileum, well-marked thickened ridges are perceived; in the interspaces, between the ridges, the mucous membrane may be brilliantly injected or congested. In some cases the large intestine shows its mucous lining throughout injected and thickened. Even in the acute stage of the fever, congestion and discoloration of the intestines occur. In the chapters indicated of Dr. Flint's essay on fevers, the post-mortem results of cases of continued fever are described with the author's usual accuracy.

Dr. Davis, in the article above quoted, after referring to the analyses of Andral and Gavarret of the blood of typhoid fever patients, gives the following analyses of his own in a case in which the microscope showed the blood, soon after it was drawn, to contain red corpuscles, more variable in size and more irregular in appearance than in healthy blood: the proportion of the elements expressed in 1000 parts were—water, 812·42 parts; red corpuscles, 106·77; albumen, 67·27; fibrin, 2·75; fatty matter, 0·67; saline, 10·09; total, 999·97. In an examination of a marked case of typhus, the amount of water was 791·0 parts; red corpuscles, 130·1; albumen, 67·0; fibrin, 1·9; extractive and salts, 10·0. "Taking the average," the author says, "of twelve analyses of blood from as many different patients with continued fever, I found the relative proportion of the different constituents or proximate elements very nearly normal. Taking separate cases, I find the blood taken from such as have been accompanied by more than the ordinary amount of water of intestinal discharges, to exhibit an excessive proportion of red corpuscles, while the reverse is true of such as have little or no such excess of intestinal evacuations; hence every analysis, to be valuable, must be accompanied by a detailed history of the case. While we find comparatively little change in the amount or relative proportion of the several proximate elements of the blood in continued fever, the alterations in quality are striking and uniform. Thus, in every case examined, the color was darker and more purple than normal; the fibrin coagulated very slowly, contracted but little, and the fibrin formed by the coagulation possessed less tenacity than in healthy blood, while the red corpuscles, viewed under the microscope, appear less biconcave, less uniform in size, and exhibit less attraction or affinity for each other; and the white corpuscles appeared to be very deficient in number." It will be perceived from these remarks that the results obtained, especially with reference to the relative proportion of fibrin, (which was found very little below the normal standard,) differ from the statements of Andral. The process by which the fibrin was separated consisted in allowing the blood to remain at rest nearly twenty-four hours, thereby giving time for the clot to be fully formed. This was inclosed in a piece of fine linen cloth, and washed with water until nothing but the pure white fibrin was left on the cloth; it was then thoroughly dried and weighed.

Analyses of blood taken from patients laboring under attacks of simple *intermittent* and *remittent* fever, led to the conclusion that the qualities or properties of the several constituents of the blood are normal, but that the relative quantity of the different proximate elements of the blood undergo important changes. The red corpuscles are markedly, and nearly uniformly diminished in proportion to the duration of the disease; the white corpuscles also were deficient; the albumen and fibrin only slightly below the normal average. Here also the results differ from those obtained by MM. Andral and Gavarret.

Dr. Joseph Jones is at present contributing a series of extended and valuable observations on the blood, and the characters of the fluids in malarial fevers, which, as they are not yet concluded, we reserve for a further notice; in the mean time we direct attention to them. Dr. Hammond's analyses of the urine of intermittent fever have led him to the conclusion that, during the fever, the uric acid and the phosphoric acid are very much increased in amount, and the urea and chlorine greatly diminished. During the intermission, there is a close approach to the normal constituents of the urine, but a subsequent paroxysm restores the former condition; the sulphate of quinia, however, reverses it.

Dr. Stuart finds in the urine of intermittent fever a sediment consisting of uric acid, urate of soda, biliary matter, and mucus. After quinia had been taken, all the above were increased in quantity, and the triple phosphates found in addition. The author believes that the blood is in a hyper-phosphatic state, and that quinia acts as a renal depurant.

Remittent Fever.—The limits we have set ourselves prevent us from going farther back than the year 1850, or we should have had to analyze the valuable papers of Drs. Stewardson,* Swett,† and Stillé‡ on the morbid appearances witnessed in this fever. Dr. Clark has found the cause of the peculiar color in the bronze or olive liver of remittent fever, to depend upon an infinite number of colored microscopical particles of irregular shape and size, varying in hue from red or orange to an opake jet black; some are beautifully crystallized, while some are in globular dots and grains; the black, often in globular grains, may also be seen in friable semi-crystalline scales, some of them almost large enough to be seen by the naked eye. The nature of this coloring matter must be sought among the chemical transformations of the hæmatin or coloring matter of the blood. They may be classed together under the group of pigment matter, to which the term hæmatoidin has been given. Specimens kept in alcohol and water lose, but slowly, something of their peculiar hue; especially is this the case if the color depends on the crystalline and red varieties.

Yellow Fever.—Dr. La Roche has in two articles described the physical characters of *black vomit*, and has brought together the views entertained as to its production. He also depicts the microscopic characters of black vomit from specimens examined by Prof. Leidy. Broken-down blood corpuscles and epithelial cells, varying in size and shape, were met with in all. A chemical examination of the vomit by Prof. Rogers, yielded albumen, sulphuric acid in a state of combination, chlorine, alkaline bases, earthy phosphates, iron, and hydrochloric acid in the free state. Dr. Myddleton Michel concludes from the examination of black vomit he has made, "that it is blood chemically altered by the action of acids, whether in or out of the vessels, the acids being hydrochloric when derived from the stomach, sulphuric acid§ of the sulphuretted hydrogen,(?) or carbonic and lactic acid, when obtained throughout the remaining portions." The pasty stools are composed of the black matters which have lost all of their characteristic features but the color, having undergone a process of digestion. No animalculæ are describable in either fresh or putrescent black vomit, but as it decomposes, certain fungi are disclosed, the result of fermentation. The author further states that the artificial black matter produced by the addition of an acid to blood, is in every respect analogous to true black vomit, being both physically, chemically, and microscopically identical.

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* Am. Journ. of Med. Science, April, 1841.

† Ibid., January, 1845.

‡ Ibid., April, 1846.

§ This must be a misprint, to which we would call the author's attention.

The absence of animalculæ is confirmed by Dr. Riddell,* who has, however, met with a form of sarcinæ in the ejected fluid. Dr. Clark has noticed, in specimens of black vomit, blood corpuscles of a uniform dark yellowish-brown color, some in the process of disintegration, forming nebular spots of considerable size; numerous scales of opake black matter, having no uniform shape, susceptible of fracture in any direction, and probably the product of some chemical change in the coloring matter of the blood; a quantity of a peculiar crystalline matter, sometimes in the form of a brush, but oftener flattened, white in color, and nearly transparent; and lastly, a vegetable growth in linear, and rather stout joints, the sections commonly separated, but often united as by a hinge. This element disappeared entirely after the lapse of three weeks.

A still more valuable observation than the preceding is the one by the same author on the liver of yellow fever. Since the time of Louis's researches, no contribution has been made to the subject which in importance or interest compares with this, and which reflects more credit on the observer. Dr. Clark has demonstrated that the cause of the yellow color of the liver in yellow fever is owing to a fatty state of the organ, probably an acute fatty degeneration. Dr. La Roche, in the most complete of all the monographs published on yellow fever, mentions that Dr. Leidy had confirmed Dr. Clark's statement in nine cases. Very important as bearing on this point, are also the autopsies of Dr. T. H. Bache, made at the Pennsylvania Hospital. In his admirable paper on yellow fever, he gives a summary of the post-mortem appearances of fourteen cases of yellow fever: in all, the liver, when examined with the microscope, was found in a state of fatty change. Generally, the cells were so studded with oil globules, as to give the idea of looking at a number of these latter, which had by chance become agglomerated or entangled by granular matter. Nor did the oil globules confine themselves merely to the granular part of the cells and their nuclei, but they were found, of various sizes, floating freely all over the field of the microscope. Dr. Riddell, on the other hand, states that well-marked fatty degeneration occasionally appears, but not constantly. This, however, does not invalidate Dr. Clark's opinion that the cause of the yellow color in the yellow fever liver is an extraordinary and rapid deposit of oil in the cells and tissues. Analogy, Dr. Clark believes, suggests that the main exciting cause of the oily deposit is an hyperæmic state of the organ during the fever. Dr. Joseph Jones,† in a letter to Prof. Samuel Jackson, states that in the liver of yellow fever patients he has found a substance which gave reactions similar to cellulose, and which presented, under the microscope, an appearance like the granules of starch.

Dr. Cartwright has placed on record post-mortem examinations made during the yellow fever of Natchez. In some of the subjects intussusception of the bowels, probably cadaveric, is noted. The bodies were examined immediately after the extinction of life. Morbid appearances were observed in the ganglionic system, and, in some cases, in the supra-renal capsules.

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* New Orleans Medical and Surgical Journal, November, 1852.

† Am. Journ. of Med. Science, October, 1857.

Foreign Abstracts,

CHIEFLY FRENCH, GERMAN, AND ITALIAN; OR, BI-MONTHLY NOVELTIES IN MEDICAL, SURGICAL, OBSTETRICAL, AND CHEMICAL SCIENCE. BY EMIL FISCHER, M.D.

PHYSIOLOGY AND CHEMISTRY.

I.—*On the Suspension of the Radial Pulse in Forced Extension of the Arm.* By Dr. A. Verneuil.

The suspension of the radial pulse is always observed when the extension of the forearm on the arm is actively or passively exaggerated. The difficulty experienced in exploring the ulnar artery does not allow an explicit statement in regard to the suspension of its pulsation. The anatomical dispositions harmonize with direct experience, so as to prove that in forced extension the arteries of the forearm and hand receive but little blood. In this position the aponeurotic expansion of the biceps and the brachialis anticus press the humeral artery against the convex projection formed by the coronoid process of the ulna; the artery is thus flattened for a length of about two centimetres, and, according to the experiments of M. Verneuil, this phenomenon must take place in a great number of physiological movements, particularly in mechanics—a fact which may serve to explain the predisposition shown by the termination of the brachial artery to spontaneous arteriectasis. This fact could also be made use of as a means of arresting the flow of blood in cases of arterial hemorrhage from wounds of the forearm, when there is no assistant present to compress the humeral artery.—(*Journal de Physiologie,* tome i. p. 506, and *Archives Générales,* November, 1858.)

II.—*Some Experimental Researches on the Effects of Cold on the Human Body.* By MM. Tholozan and Brown-Séquard.

A series of researches permits the authors to draw up the following propositions:—1. If our extremities are exposed to the action of cold water, they can in a very short time lose a considerable portion of their temperature, (according to our experiments, from ten to eighteen degrees.) 2. After an extremity has lost much of its temperature, (from ten to eighteen degrees,) it does not regain it before the end of forty-five minutes or an hour in an atmosphere varying from twelve to eighteen degrees. 3. Contrary to the opinion of Edwards, the lowering of the temperature of a small part of the human body has no sensible influence upon the general temperature. 4. The lowering of the temperature of one hand can produce considerable falling of the temperature of the other, without the general temperature of the body being sensibly diminished.

Dr. Brown-Séquard has ascertained that the latter phenomenon becomes more marked if the immersed hand is the seat of more intense pain, and if the temperature of the air in which the other hand is kept is less elevated; it is also proportional to the contraction of the vessels of the hand not immersed, and it is this contraction exclusively which produces the falling of the temperature. This phenomenon is an example of reflex action upon the blood-vessels, their muscles contracting under the influence of an irritation applied to the sensitive nerves of another extremity; it is further remarkable, that this reflex action takes place only between homologous parts, and that the immersion of the hand, for instance, into cold water, exercises no appreciable influence upon the temperature of the feet.—(*Journal de la Physiologie*, tome i. p. 497, and *Archives Générales*, November, 1858.)

III.—*On the Formation of Vivianite in the Animal Organism.* By M. J. NICKLES.

M. Schiff has proved, by chemical analysis, that the blue color which pus sometimes presents is owing to phosphate of iron in an amorphous state. It is this same salt which gives the blue color to animal remains which have been interred for a long time. The demonstration of this fact is owing to M. Nickles, who has found in human bones phosphate of iron crystallized in the form peculiar to the vivianite of mineralogists.—(*Journal de Pharmacie et de Chimie*, June, 1858.)

PATHOLOGY.

IV.—*On Apoplexy of the Cerebellum.* By DR. J. B. HILLAIRET.

FROM a considerable number of carefully reported cases, the material for which was offered to Dr. Hillairet in the *Hospice des Incurables*, at Paris, the author draws the following general conclusions in regard to the semeiology of apoplexy of the cerebellum:—"Between the different parts which compose the substance of the brain there exist such intimate relations, and, to a certain point, such a functional harmony, that it necessarily affects also the symptomatology of their diseases to a very marked degree. It is from this reason one of the most difficult tasks of diagnosis to distinguish the affections of the different parts of the brain. Until the present time, observations have not been sufficiently numerous to establish reliable characteristics for the differential diagnosis of apoplexy of the cerebrum and cerebellum. The following facts may, however, be considered as an endeavor to commence the solution of this question."

From the cases reported by the author, it results that, although apoplexy of the cerebrum and cerebellum have many symptoms in common, as, for instance, cephalalgia, vertigo, stupefaction, tinnitus aurium, hemiplegia, etc., apoplexy of the cerebellum is still generally marked by a collection of peculiar symptoms:—
1. Apoplexy of the cerebellum may occur under two forms: one with a slow, though steadily progressing course, from the time of the attack to the fatal termination; the other appearing suddenly, and with an extremely rapid course. The latter may even produce instantaneous death, which is not the case in apoplexy

of the cerebrum. 2. In the first form the attack is not accompanied with loss of consciousness; in the second, if the fit is violent, consciousness may be lost in rare cases for a short time; but it always returns very soon. 3. In both forms the attack is accompanied by vomiting, which is repeated during the course of the disease, and lasts until death; sometimes it is incessant and unyielding; in the first form, however, it is more frequent than in the second. Vomiting does not appear to be a symptom of apoplexy of the cerebrum, as many authors state; it is, on the contrary, peculiar to apoplexy of the cerebellum as well as to any other affection which may produce an increase of the volume of this organ. The examination of many facts leads the author to the supposition that the symptom in question is owing to a slight compression, or to irritation of the par vagum, caused by the dilatation of the cerebellar substance which follows the hemorrrhage; from a similar cause vomiting is a frequent symptom in abscesses, tubercles, cysts, etc. of the cerebellum, while in softening, where the increase of the circumference of the organ is almost imperceptible, it is rarely met with. According to his own experience, and to facts furnished by extensive statistical researches, the author believes himself justified in stating that, contrary to the general opinion, spontaneous vomiting is a very rare symptom in those cases of apoplexy of the cerebrum which are not accompanied by any complication on the part of the cerebellum. While vomiting is only observed in one case out of thirty of apoplexy of the cerebrum, the proportion in apoplexy of the cerebellum is one to two and a half. 4. Somnolence and coma are common in the severer form, but the intellect is not destroyed on that account except a few hours before death; even in patients attacked by fulminant apoplexy of the cerebellum, consciousness often remains, for they are able to communicate their suffering by words and gestures at the moment of attack; they generally die very soon afterwards. In fulminant apoplexy of the cerebrum, on the contrary, the patients fall down senseless, without uttering a sound or making a sign, and have stertorous breathing. 5. The relaxation of the extremities is likewise a usual symptom of apoplexy of the cerebellum. The patients cannot maintain their equilibrium on standing up, but are capable of moving the lower extremities while lying down; they can likewise keep their limbs up in any position given to them. Hemiplegia is not as frequent as many authors state, and is met with only in a third of the cases. The author did not observe it in any of his cases. The paralysis always affects the side of the body opposite to the one in which the effusion has taken place. 6. The tendency to retrogressive or rotatory motion was observed by the author in only one instance. 7. Facial paralysis of the opposite side, as observed in apoplexy of the cerebrum, is only exceptionally met with in apoplexy of the cerebellum; among twenty-six cases the author found only one in which one corner of the mouth was distorted. Deviation of the tongue is also exceedingly rare; the speech is nevertheless commonly inarticulated and slow. The features bear a rather peculiar expression of stupidity and astonishment, accompanied by a staring gaze,—an expression worthy of notice in regard to diagnosis. This peculiarity usually disappears some time after the attack. 8. Sensibility remains intact in the severer apoplexy of the cerebellum; once the author observed transient hyperæsthesia in the course of the disease. Only at the approach of the agony of death the sensibility becomes more blunt and feeble, and seems to disappear with the increase of coma. The contrary takes place in apoplexy of the cerebrum, in which sensibility is generally lost from the moment of the attack. 9. As is the case with general sensibility, the senses also remain intact; the hearing, smell, and taste are changed only in exceptional cases; sometimes sight becomes feebler, or is even lost, if the processus cerebelli ad testes are injured or destroyed. Contraction and immobility of the pupil is the rule, dilatation the exception. 10. Convulsions do not occur in apoplexy of the cerebellum, except if the injury of the cerebellum is complicated with injuries of other parts of the central nervous system, or if the hemorrhage is followed by inflammation of the surrounding cerebellar tissue. 11. With exception of the vomiting mentioned above, the digestive organs suffer only slight or no disturbance; the bowels are mostly constipated; sometimes, however, the discharge is involuntary. The evacuation of urine is in cases of the first form voluntary at the commencement, but becomes involuntary toward the end of the malady; in the course of the second form it is involuntary. 12. The average duration of the disease is one and a half days. The slowness of respiration which soon becomes stertorous, is apparently owing as much to the relaxation of the whole muscular system, particularly of the intercostal muscles, as to the pressure to which the par vagum is subjected. It is probably due to these circumstances that the rapidly fatal termination of the disease is mostly dependent. Although death is the general consequence of apoplexy of the cerebellum, the possibility of a cure is not excluded.

As regards the causes of apoplexy of the cerebellum, they are essentially the same as those of apoplexy of the cerebrum. Like the latter, so also the former is most frequent between the sixty-first and seventy-seventh years of life, and is more common in men than in women. Of thirty cases of apoplexy of the cerebellum, eighteen occurred in males, and twelve in females.

The pathological changes are the same as those observed in the cerebrum. Hemorrhage into the centre of the cerebellar substance was most frequently met with; only in five cases was it confined to the surface. In five cases the worm only was attacked, and destroyed; in three the fourth ventricle was the seat of the hemorrhage, and in three other cases both hemispheres of the cerebellum were implicated at the same time. The clot of blood varied in size from that of a nut to that of a pigeon's egg; in some cases it was very considerable, and in one the affected hemisphere was converted into a pocket containing blood. In five cases the hemorrhage was preceded by softening; in some other cases cerebellitis was developed around the seat of the effusion; it was particularly in those cases in which complete convulsions or isolated spasms had been observed. In six cases extravasations were met with simultaneously in the cerebrum and cerebellum.

The treatment of the disease under consideration is of course the same as that of apoplexy of the cerebrum.—(*Archives Générales de Médecine*, 1858.)

V.—*Observations on Pneumonia.* By DR. METZGER.

From forty-eight cases of pneumonia which he had observed in the clinic of Professor Pfeufer, in Munich, Dr. Metzger draws the following conclusions:—

1. There are certain signs observable in the course of pneumonia which constantly and on a certain day introduce a favorable crisis of the disease; *herpes labialis* is one of these signs. 2. A constant symptom also is the diminution of the chlorides in the urine, observed during the continuance of the fever and exudation, and the increase of the same during the process of resorption. 3. The secretion of urea, which is insignificant during the first days of the disease, reaches its maximum on the sixth day. 4. The diminution of temperature is preliminary to the decrease in the frequency of the pulse. 5. The intermittent character of the pulse indicates that the pulse is about to become slower, particularly if the temperature is at the same time diminishing; the presence of other bad symptoms may, however, render an unfavorable interpretation of this sign necessary. 6. During convalescence of pneumonia it is constantly observed, that the pulse becomes slower even underneath its normal standard. 7. Some of the observed cases show the possibility that double pneumonia may originate from morbid changes in the central organs of the nervous system.—(*Zeitschrift für Rationelle Medizin*, 1858, iv. 3.)

VI.—*On Rheumatism of the Diaphragm.* By DR. CHENEVIER.

After reporting several cases of this disease, the author gives the following description of it:—The disease commences with a sudden pain at the points of attachment of the diaphragm, which produces a feeling of constriction at the base of the thorax, but is not augmented on pressure. Deep inspirations are impossible, and respiration is carried on only by the superior ribs. Percussion is normal, and auscultation does not reveal any change in the respiratory murmur, which is only somewhat weaker at the base of the thorax; there is no cough; sometimes, however, a painful hiccough. The abdominal organs offer no symptom of disease. The attack lasts from one to eight hours, and disappears then without leaving any trace. The prognosis is favorable. Rheumatism of the diaphragm is easily distinguished from inflammatory diseases of the lungs by the absence of the symptoms of the latter. It could only be mistaken for a neuralgic affection of neighboring organs, as, for instance, intercostal neuralgia; but it is sufficiently distinguished from it by the pain being felt particularly in the three characteristic points, while in the neuralgia just mentioned it is confined to one side. From angina pectoris it is distinguished by the peculiarity that the pain proceeds in this malady from the sternum and radiates on one side to the arm. In nervous asthma, which also commences with sudden difficulty of breathing, the peculiar feeling of constriction as well as the confinement of the respiratory movements to the superior ribs, is not noticed; the two latter symptoms are pathognomonic of rheumatism of the diaphragm.

The treatment of the disease consists in the application of cups, mustard poultices, anodyne embrocations, and chloroform; if it is obstinate, the endermatic application of morphia will be useful.—(*Gazette des Hôpitaux*, 1858, No. 35.)

VII.—*On the Non-Elimination of Odorous Substances by the Urine in Bright's Disease.* By M. DE BEAUVAIS. (Communicated to the *Académie des Sciences*, October 25th.)

Repeated clinical researches have proved to M. de Beauvais that odorous substances, fixed or volatile, do not pass by the urine in confirmed Bright's disease.

This circumstance is an exclusive, pathognomonic sign of the malady; it persists with the disease when the symptom of albuminuria is momentarily suppressed; it never exists in albuminuria arising from other causes, no matter how persistent this may be. It confirms the importance and the nature of the part taken by the cortical substance in the elaboration of the urine. It proves the distinct character of Bright's disease, and of the morbid transformations peculiar to it; and it reveals at the same time the serious and incurable character of the confirmed disease. In the absence of the albuminuria, the principal symptom, or of the characteristic dropsy, the absolute and incurable suppression of the passage of odors serves at the same time to indicate the diagnosis, the prognosis, and the treatment. In addition to this, the presence of the symptom is easily ascertained by administering the juice of asparagus, or the essence of turpentine.—(*Archives Générales,* December, 1858.)

VIII.—*A Case of Spontaneous Hydrophobia.* By DR. HENRICH.

F. K., thirty years of age, suffered on the twenty-ninth of May, 1857, of cephalalgia, which radiated from the forehead to the occiput, and of all the symptoms of a cold in the head. On the morning of the thirtieth he complained of chills, and distressing horripilations. Dr. Henrich examined the patient attentively, without finding in the throat or elsewhere a single sign of disease. In the evening he was called in great haste to the patient, whom he found sitting in the bed, the face bathed in perspiration, pale, and expressing terror; the eyes injected, brilliant, haggard; the voice hoarse, anxious, and broken. The patient complained of pain and constriction in the throat and chest, of intense thirst with impossibility to drink, and of dryness of the mouth. The respiratory movements were accelerated, superficial, and irregular; they became normal in the interval of the spasms, which followed each other rapidly; but when the throat became constricted, the patient seemed to suffocate, and carried the hand to the neck as if to remove an obstacle to respiration. The saliva flowed in great quantity from his mouth. Pulse ninety, and feeble. Pharynx a little reddened, and covered like the mouth with viscid mucus.

After earnest entreaties, Dr. Henrich finally succeeded in trying to overcome his violent horror of liquids; after having for a long time struggled against a convulsive contraction of the muscles of the forearm, he could finally bring a glass of water to his mouth, but hardly had the first few drops of the liquid touched his lips, when he was seized with a violent attack of suffocation. He threw his glass away with a gesture of despair, and taking refuge in the remotest part of the bed, cried out to take the water away; that he could not swallow; that he was suffocating.

In this condition he remained during the night. The impression of light or of a current of air exercised, however, no perceptible influence upon the spasms, and the vesicles of Morochetti were not found on the margin of the tongue. In spite of venesection, a blister on the chest, etc., all the symptoms were aggravated the next day; chloroform exasperated them; and they became less violent only for a few moments, after the patient had lost about a pound of blood through the wound made by the venesection, which had opened again; but soon they returned with greater intensity; tetanic convulsions and opisthotonos supervened, and the patient expired half an hour later. He had preserved the full power of his intellectual functions until tetanus came on.

On autopsy a very slight swelling of the base of the tongue was discovered; the pharynx was in a healthy condition; some pulmonary hypostasis, and two hemorrhagic suffusions in the mucous membrane of the stomach were found. All the other organs, the spinal marrow included, presented no alteration. The blood was black, liquid, and diffluent.

Dr. Henrich assured himself, by the most careful inquiries, that the patient had never been bitten by a dog, either mad or healthy, and that he did not believe himself at all attacked by hydrophobia. For three weeks previous, however, he was in low spirits, and without being otherwise sick, had a presentiment of his approaching death, as he said. He indulged, however, in excessive coïtus, (he was married and kept two mistresses,) and was troubled with grief and sorrow. To these two causes combined, the appearance of the terrible malady may be attributable.—(*Henke's Zeitschrift für Staatsarzneikunde*, 1858, p. 361.)

This case, which belongs to the third class of spontaneous hydrophobia of M. Chomel, (*Dict. de Méd.*, tome xv., 1837,) is, among all the published cases, one of the most characteristic. Cases of similar kind have been reported by MM. Ely, Burggreave, (*Gaz. des Hôpitaux*, 1854,) Lessmann, (*Preuss. Vereinszeitung*, 1854,) Bulley, (*Assoc. Med. Journ.*, 1854, Nov. 11,) and Putegnat, (*Journ. de Méd. de Bruxelles*, June, 1853.)—(*Gazette Hebdomad.*, 1858, 40.)

OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

IX.—1. *Death after an Injection of Carbonic Acid into the Uterus.* By PROFESSOR SCANZONI. 2. *Experiments with Carbonic Acid on Pregnant Rabbits.* By DRS. BRESLAU and VOGEL.

THE woman whose case Professor Scanzoni reports in the third volume of his *Beiträge zur Geburtskunde und Gynäkologie*, (p. 181,) 1858, was pregnant, but in consequence of an error in diagnosis, amputation of the hypertrophied cervix uteri was decided upon; it protruded out of the vulva in the form of a bluish, chinky tumor, of the size of a small apple. The attending physician, father of the patient, insisted upon having carbonic acid injected into the cavity of the uterus, preparatory to the operation, with the view to prevent too profuse a hemorrhage; this injection was made by means of a suitable apparatus; but hardly had some cubic inches of gas penetrated into the cervix, when the patient screamed that she felt the air rushing into her abdomen, her neck, and her head. General tetanic convulsions supervened; then a long agony. In about an hour and three-quarters the patient was a corpse.

On autopsy no other lesion was found to which death was attributable, but a very considerable œdema of the lungs. The womb contained an uninjured ovum of about four months.

This case excited considerable interest in Germany. The recommendation of Simpson and several other English physicians had induced obstetricians to make numerous experiments with carbonic acid—partly as a means to produce artificial labor, partly as local anæsthetic; and its efficacy had been proved by numerous facts. The method seemed to have recommended itself by its safety, although the experiments of M. C. Bernard, of Lyons, (*Archives Générales*, tome x. p. 529, 1857,) had already demonstrated that toxical symptoms may result from injections of carbonic acid into the vagina. These researches in reference to local anæsthesia serve to prove that absorption of the gas may produce cephalalgia, vertigo, stupefaction, debility, dimness of vision, nausea, and more or less profound somnolence; but these symptoms were not sufficiently serious to give reason to fear the possibility of a fatal termination, and the report of the case of Professor Scanzoni was read everywhere with painful surprise.

Is this unforeseen death to be attributed to poisoning qualities of carbonic acid? or could the gas have penetrated into the orifice of an open vein, and have acted like air introduced into the veins? Professor Scanzoni himself remained in doubt about these questions, and it was with a view of throwing light upon them that Dr. B. Breslau and A. Vogel, of Munich, made a series of experiments on female rabbits in the different stages of pregnancy and puerperal state. The results of these experiments were as follows:—

The even prolonged injection of a great quantity of carbonic acid into the vagina or the peritoneum of pregnant rabbits, exercised no unfavorable influence upon their general health, nor upon the life of the fœtus; gestation suffered no modification from abundant intra-vaginal injections of even half an hour's duration. In making the injection under high pressure into the vagina or uterus, eighteen hours after delivery, no bad symptom was produced; although it is probable that the uterus presented at this period still some open vascular orifices.—(*Wiener Medizinische Wochenschrift*, September 11, 1858.)

X.—*On the Treatment of Syphilis in Pregnant Women.* By M. E. BERTIN.

Among the facts which have contributed the most to make the employment of mercury during pregnancy objectionable, and to diffuse the opinion that this medicine easily produces abortus or death of the fœtus, those which M. Colson has recorded in his memoir, "De l'influence du traitement mercuriel sur les fonctions de l'uterus," (*Archives Générales*, tome xviii. p. 24,) deserve especial notice. M. Bertin has subjected these not very numerous observations to a critical analysis, which shows peremptorily that not one of them has the demonstrative character which has been so readily attributed to them. He mentions then a remarkable case of Moriceau, which shows that mercury not only does not cause abortus, but that it may even prevent it, (Des maladies des femmes grosses, etc., 2d edit., p. 179,) and reports the history of eleven pregnant women who were treated in the *Maison de Secours* of Nancy. This is the complete series of all the cases which have presented themselves during the first four months of the year 1857.

All these patients, in whom pregnancy was more or less advanced, suffered from secondary symptoms, and were treated with pills of protiodide of mercury, or with the liquor of Van Swieten. Out of these eleven women, eight were delivered at term of living children, and their pregnancy had followed its natural course during their sojourn in the hospital; one of them was subjected to two mercurial treatments while she was pregnant, and did not experience any bad consequences. In the three other patients the pregnancy did not reach its term; but it is more than probable that the mercury had nothing to do with this result. In fact, one of these women was delivered of a dead child in a state of putrefaction, the movements of which had ceased to be felt before the mother entered the hospital. The second had miscarried already twice before she contracted the venereal disease, and it is possible the third abortus took place under the same influence as the two others. The last patient was delivered of a living child of seven months, upon which, consequently, the mercurial treatment could not have acted in a fatal manner.

M. Bertin concludes, from these facts, that mercury does not exert a fatal influence upon the human fœtus, (contrary to the opinion of Professor Trousseau,) and admits, with Ricord, "that the period of pregnancy, far from opposing the employment of energetic measures, demands still more attention and judicious promptitude."—(*Compte Rendu des Travaux de la Société de Médecine de Nancy*, p. 82, 1858, and *Gaz. Hebdomad.*, December 10, 1858.)

XI.—*Tubage of the Glottis by Forced Dilatation of the Larynx, in the Treatment of Croup.* By M. BOUCHUT.

In a memoir addressed to the *Académie de Médecine*, (September 14th,) M. Bouchut described a new method of treating croup, which consists essentially in introducing a silver tube into the larynx, through which air can more easily enter, and false membranes be expelled more readily. The canula is cylindrical, straight, from one to two centimetres long, and provided on its superior extremity with two round projections, placed at a distance of six millimetres from each other; it is provided with a hole through which a silk ligature is passed, designed to retain it. In introducing the instrument into the interior of the larynx, a curved probe, pierced at both extremities, serves as a conductor. It is placed into the glottis in such a manner that the two round projections, mentioned above, receive the inferior vocal chords into the space between them, (in a manner similar to a stud which confines the folds of a shirt bosom.) The tube is allowed to remain in place from one to three days, that is to say, until the phenomena of asphyxia have disappeared.

M. Bouchut has published two cases in his memoir, and a brief account of five others has been given in the report, read before the *Académie de Médecine*, by M. Trousseau.

The first case is that of a girl, five and a half years old, who was already cyanotic and suffocating when the apparatus was applied. The child seemed to be somewhat relieved by the canula, and the imminent asphyxia ceased. The patient succumbed, however, to repeated paroxysms. On autopsy, the existence of tubercular pneumonia was ascertained. There existed no traces of false membranes in the larynx and trachea; the mucous membrane was red, thick, and granular, on a level with the superior and inferior vocal chords, and on the interior surface of the cricoid. In the second case, that of a boy, three years and a half old, the operation was performed before the asphyxia had reached so high a degree, and was executed with great facility. Two large fragments of false membranes were ejected through the canula. In the absence of M. Bouchut, the respiration became embarrassed, and the child seemed in danger of suffocation; the "*internes*" of the hospital decided, therefore, to perform tracheotomy. According to the views of M. Bouchut, the necessity of the operation in this case could be called into question.

The author thinks these facts sufficient to show: 1. The facility with which tubage of the glottis can be executed by means of a canula fixed on the inferior vocal chords, and not hindering the functions of the epiglottis. 2. The tolerance of this tube by the larynx. 3. The possibility of remedying the asphyxia of croup and of the diseases of the larynx by this means, in preference to tracheotomy, a difficult and dangerous operation, the mortality of which varies from eighty to ninety per cent. 4. The facility with which the large pseudomembranous concretions formed in the trachea and in the bronchi escape through this intra-glottic tube. 5. The utility of this new resource for physicians who live in the country, and are unable to procure the assistance necessary for the performance of other operations. The five other cases have not had a more favorable termination, and the tubage of the glottis has not yet been successful in averting the fatal end in a single instance.

The operation itself, its facility and advantages, are at present the object of an animated discussion before the *Académie de Médecine*, the result of which we will give at some future time.—*Gazette Hebdomad.*, and *Archives Générales*, November, 1858.)

SURGERY.

XII.—*On Two New Methods of Treating Diseases of the Lachrymal Sac.* By DR. V. GRAFE.

IN one of the sessions of the *Society of Berlin Physicians*, (July,) Dr. v. Gräfe reported on two new methods of treating affections of the lachrymal sac, which he considers a decided progress in ophthalmic surgery. One of them was proposed by Bowman, and has for its object the restoration of the permeability of the lachrymal passages by methodic dilatation. It differs from all the known methods of dilatation in the point that the lachrymal sac is not laid open through the skin, but that the instruments are introduced from the mucous membrane through the inferior punctum lachrymale, which has been previously dilated by slitting it. Although an experience of only four months does not permit any positive statement on the permanency of cures thus obtained, Dr. v. Gräfe does not hesitate, even at this early moment, to pronounce Bowman's method the best of all used for the restoration of the lachrymal passages.

The second innovation was proposed by Dr. Tavignot, and has the opposite indication in view, viz., to destroy the lachrymal passages. Believing that the entrance of tears rendered the obliteration of the lachrymal sac difficult, Tavignot recommends to cut off the puncta lachrymalia, in order to prevent tears passing into the sac. The idea itself is correct, but the obliteration of the lachrymal canals is not effected with certainty by the process recommended. Von Gräfe uses other means, for instance ligation with a suture, gradually cutting through, or cauterization by means of a small *portes caustiques*, which are introduced into the lachrymal canals. Dr. Leibreich, who assisted in Gräfe's clinic, conceived the idea of coating Anel's probes with nitrate of silver; in order to make the caustic adhere, the probes were first rendered rough by exposing them to the action of nitric acid; thus prepared, they were dipped into fused nitrate of silver. Any silver instrument can be converted by this process into a caustic body. After permeability of the lachrymal canals is obtained, the obliteration of the lachrymal sac is easily effected by gentle caustics. The hot iron, chloride of zinc, Vienna paste, etc., which often produce circumscribed caries, can be dispensed with.

By these two innovations the old contest between destructive and conservative surgery, in the treatment of diseases of the lachrymal sac, has been revived. According to Dr. v. Gräfe's opinion, the following rules are to be observed in regard to the indications:—1. In every case in which circumstances offer the prospect that perviousness may be permanently restored, the surgeon should endeavor to obtain it by Bowman's method. 2. In cases where the restoration of permeability is problematic, and could only be obtained by a tedious cure, it must be ascertained whether the lachrymal glands of the patient, after removal of all causes stimulating them to excessive secretion, furnish a relatively great or small quantity of tears. Dr. v. Gräfe gives the necessary rules for making this estimate. In cases in which the quantity of the secretion is small, obliteration, after cauterizing the lachrymal canals, is preferable to restoration of the continuity. No stillicidium lachrymarum remains in this case. If, however, the quantity of the secretion is large, Bowman's method should be first tried, for fear that the stillicidium might remain; only if it is impossible to obtain a permanent cure by this means, the lachrymal sac should be obliterated. Dr. v. Gräfe communicates the following statistical results in reference to this operation:—Of one hundred patients in whom the lachrymal sac has been successfully destroyed, twenty suffer of permanent and troublesome overflowing of tears; seventy are molested neither at their work nor in the room, but experience increased moistening in open air, or if excited to tears, etc.; ten finally do not notice any difference from the normal eye. 3. In cases of caries, organic obstructions, etc., in which there is no prospect for restoration of the continuity, the lachrymal sac should be at once obliterated, as in any case the condition of the patient is ameliorated by this measure. Thus the troublesome suppuration is not only done away with, but some of the principal causes of the hypersecretion of tears are also removed, and in consequence of it the stillicidium is proportionately reduced.—(*Allgemeine Medezin. Central Zeitung*, 1858, 67.)

XIII.—*On the Use of Ergot in Certain Diseases of the Eye.* By Dr. v. Willebrand.

The known effect of ergot upon the unstriped muscular fibres of the uterus, and upon the analogous tissues of the walls of the blood-vessels, induced Dr. v.

Willebrand to try this remedy in several forms of diseases of the eye, in which he supposed that the evil could be cured by exciting a greater contractility in the walls of the blood-vessels, or in other tissues containing unstriped muscular fibres. The greatest benefit from the administration of ergot, the author derived in those disturbances of the function of accommodation, described as *hebetudo visus*, (asthenopia,) in which the eye can accommodate itself only for a short time sufficiently to occupations near to the face, (reading, writing, sewing, etc.) Dr. v. Willebrand met serious cases of this kind, particularly among the pupils of young ladies' seminaries, who are generally exposed to unfavorable conditions of ocular hygiene, such as writing with the body bent forward, and with insufficient light. The author cured all these cases, at least for some time, by the exhibition of ergot; at the same time he ordered the eyes to be spared, and spectacles dampening the light to be used. The author used the remedy successfully also in a case of epophthalmus with hypertrophy of the heart and of the thyroid gland, (a peculiar combination which has been lately much discussed,) and in blepharitis, and pustular syndermitis of children. As the usual dose for adults, he prescribes five grains of ergot, generally combined with magnes. carbon., sometimes, if chlorosis is present, with iron, to be given three or four times daily.—(*Archives für Ophthalmologie*, 1858, iv.)

XIV.—*Observations on the Causes, Nature, and Treatment of Hemeralopia.*

By DR. NETTER.

Dr. Netter, Physician to the Military Hospital of Strasburg, had the opportunity of observing a great many cases of hemeralopia in the French army, and presented his experiences to the *Académie des Sciences*, in an interesting memoir on this disease. The conclusions to which he arrives are the following:—1. Hemeralopia is that kind of blindness opposite to nyctalopia, and is caused by an excess of light, while the latter originates from a long privation of this stimulus. 2. When a patient afflicted with hemeralopia is conducted into a very dark room during daylight, he is unable to see, although the persons accompanying him recognize every object in the room. Hemeralopia is, therefore, not a periodical blindness, which commences in the evening and disappears in the morning, but exists also during daytime, and consists in the incapability of seeing by diminished light; in short, it is a blindness in the dark without the least reference to the time of the day. 3. The cure of the disease can be accomplished in a few hours. The patients are brought into a dark room in the middle of the day, and are ordered to look about continually in all directions, so as to exert their power of vision. After two or three hours, the faculty of seeing returns: with this result the disease disappears entirely, and no relapse takes place, not even during the following nights.—(*Comptes Rendus*, 1858.)

XV.—*On the Internal Treatment of Ulcers of the Leg by Iodide of Potassium.*

By M. TRASTOUR.

Without reviewing the theory of an "ulcerative diathesis," advanced by Phil. Boyer, M. Trastour is of the opinion that ulcers of the leg are owing as often to a general disposition of the economy, as to local causes, and this opinion seems to him justified by the success which he has obtained from iodide of potassium in the treatment of these ulcers. Repeated observations permit him to draw up the following propositions:—1. Iodide of potassium, administered in a dose of two to six grammes a day, cures the most obstinate ulcers of the leg in one or two months, rarely more, no matter whether they are of syphilitic nature or not. The ulcers, and even the varicose congestion, yield rapidly to this medication, which may be assisted by regulated compression and a simple dressing. 2. The patients can continue their occupation during the treatment; they do not require rest. 3. The cure by this simple method is easier, more complete and reliable, than by any other known method.

There are, however, a certain kind of ulcers which require a special and more complex treatment; these are the scorbutic, herpetic, and scrofulous ulcers. Of ulcers which did not present one of these peculiar characters, M. Trastour reports several cases which speak highly in favor of his mode of treatment. The modification which takes place in the ulcers by the use of iodide of potassium may perhaps be explained by supposing that this salt, which passes rapidly into all the secretions, passes also into the ulcerous secretion. Brought in contact with the ulcers from within to without, it modifies them, molecule after molecule, that is to say, as completely as possible; at the same time, it acts upon the surrounding congestion, and upon the whole constitution.—(*Journal de la Société Académique de la Loire-Inférieure*, tome 34, l. 177, and *Gaz. Hebdomad.*, December, 1858.)

XVI.—*Modification in the Preparation of Moxas.* By Dr. Cramer.

After having made moxas from carded cotton, in the usual way, Dr. Cramer applies to both ends of them a layer of collodion by means of a brush, and allows them to dry. Thus prepared, they preserve their density during the process of combustion, and do not dilate even toward the end, as ordinary moxas do; their combustion is neither too rapid nor too slow. In applying them, one end is ignited, and the other is glued to the skin by means of one or two drops of collodion; the combustion is hastened by one of the usual measures. This modification has given very favorable results in the hands of Dr. Cramer, and recommends itself from its simplicity.—(*Echo Médical Suisse*, 1858, tome 1, p. 762.)

Bi-Monthly Periscope.

SURGERY.

1.—EPILEPSY FOR THIRTY-TWO YEARS IN A MAN AGED FORTY-FOUR, WITH DISCOLORATION OF THE SKIN FROM NITRATE OF SILVER; OPERATION OF CASTRATION. Under the care of *Mr. Holthouse.*—Among the causes of epilepsy mentioned by various writers, extreme sexual excesses are considered as not the least important. They would appear to have much influence on the frequency of the fits, as is shown in the narrative of the following case, the notes of which were taken by Mr. H. Ponsonby Adair, house-surgeon to the hospital. There are cases on record in which castration has been resorted to as a means of relief. In one reported by Mr. J. P. Frank, the *aura epileptica* began in the testicle, and it is asserted that a permanent cure followed castration.

This operation is much practiced at the present day among the Eastern nations, for the sole purpose of depriving their slaves of manhood; and Mr. Curling informs us, in his work on the "Diseases of the Testis," that in Italy it was once frequently performed, on account of its effects on the vocal organs.

Eli B——, aged forty-four, widower, native of the United States, bookseller, was admitted into Luke ward, in the Westminster Hospital, on the 4th of January, under the care of Mr. Holthouse, in order to have the operation of castration performed for the cure of epilepsy.

The patient is one of fourteen children, of whom eleven are living and healthy; his father is alive, aged eighty-four, and his mother died at eighty. There is no insanity in his family, nor is any member of it afflicted with epilepsy. He was a healthy child till he was ten years of age, when he commenced to practice masturbation, and soon after had an epileptic fit, in which he bit his tongue. This was followed by severe pain in the head, and incapacity for exertion next day. The fits recurred every three or four weeks. They came on suddenly, without any premonitory symptoms. During the first two years he took "skull-cap tea," without effect; his diet was also regulated. He still continued to practice self-abuse, and did not finally relinquish it till he was twenty-two, about the time when he began to take nitrate of silver. For two years he tried homœopathy, the fits increasing in severity. He was at school up to the age of fifteen, when he tried a sea-voyage, but without benefit. Having returned, he sailed for South America, where he remained for two years, the fits being as frequent as before. While at New York he contracted gonorrhœa, having been accustomed to frequent sexual intercourse from the age of sixteen, in addition to the habit of self-abuse. He remained in New York for a few months, trying various remedies, among them sulphate of zinc, but without relief. He went again to the South for a few months, and upon his return he placed himself under the care of Dr. Kissam, (his brother-in-law,) who prescribed nitrate of silver, in doses of one-eighth of a grain, three times daily, and in two months it was increased to half a grain. Very soon after he began to take this remedy, the severity and frequency of the fits began to decrease, and he was so convinced of its efficacy, that he continued its use for about eight months, against the advice of Dr. Kissam, who feared it might affect his skin, which, indeed, it did to some extent, giving it a blue tint. At the end of this time, the fits left him for a period of two years, having gradually decreased in frequency under the use of the nitrate of silver. From the time of his contracting gonorrhœa till his marriage, he abstained altogether from sexual intercourse and the habit of self-abuse, so that during the whole time that he was taking the nitrate of silver he had no extraneous sexual excitement; yet during this period he says that he was constantly troubled with nocturnal erections, and frequent seminal emissions. Being now twenty-four years of age, he married, shortly after which he again became addicted to sexual excesses. He left his wife and his business for several months, and traveled; the fits, however, recurred every three or four weeks, and were very severe. On his return his wife died, and he remained a widower six years, abstaining altogether from sexual excesses, although frequently troubled with erections. During the six years he broke his arm, several fingers, and his leg twice, while in the fits. At the age of thirty he married a second time, the fits having increased in number and severity. He was often compelled to send his wife into the country for a day or two, in order to avoid sexual excitement. The fits now recurred daily. His wife died a year after marriage. After this he again abstained from sexual excesses. Dr. Horace Green, of New York, now cauterized his larynx daily with nitrate of silver, and at the end of three or four months he would be free from fits for nineteen days; when they did recur, they were so slight that he scarcely lost consciousness, and did not fall down. This plan of treatment was pursued for two or three years, at the end of which time he became attached to another young woman, which revived all his old amatory feelings, and the fits began to increase in frequency, recurring at intervals of fourteen days, when they would continue daily for a week, and then cease for fourteen days more. Galvanism was now tried, with some slight beneficial effect. Next arsenic, in the form of Fowler's solution, which he continued till the fits recurred daily, and he became so prostrate that he was confined to his bed. For a long time he took iron to neutralize the effects of the arsenic, but for months he was compelled to walk on crutches. He came to England two years ago, to have tracheotomy performed by Dr. Marshall Hall, who had advised it when he saw the man in America. Dr. Hall died soon after the man's arrival, and he went to Paris, and was under the care of M. Nélaton. Afterwards, he placed himself under the care of M. Trousseau, who gave him belladonna, which affected his vision, but not his fits. Dr. de Lasiauve next treated him with camphor for four months, without effect. He returned to England, and was under Mr. Simon, at St. Thomas's Hospital, in order to have castration performed, in which he had great faith, for he attributed his fits chiefly to sexual excitement, which still troubled him much; but his wish was not acceded to. He took bromide of potassium without any benefit, and then the nitrate of silver for two or three months, in half-grain doses three times a day. The skin became darker than before, and the fits recurred daily. He next went to Germany, and was there sounded for a stone in the bladder on account of frequent micturition, which he has had since infancy. No calculus was present. He was an inmate of the hospitals of Vienna, Prague, and Dresden. He left the latter in October, 1858, and was admitted into the Westminster Hospital, under Dr. Radcliffe, on the 30th of the month, and remained in two months, during which time he took quinine and iron, and camphor, but without avail. Since his second wife's death he has entirely abstained from sexual intercourse, though he has been constantly troubled with nocturnal erections, and occasional seminal emissions, and these continued up to the time when he came under the care of Mr. Holthouse, to whom he applied to perform castration, which, after much deliberation, he consented to do; and it was performed upon both testicles on the 4th of January, 1859, under the influence of chloroform. Two or three hours afterwards, there was considerable hemorrhage, which was checked by the application of cold. He had one fit during the hemorrhage. His face has a bluish-slate tinge, which pervades the body, but the color is darkest on the face. His fits are of the rotary kind, preceded by a sudden scream, and lasting not more than a minute, and when over he is quite himself again. In the fit which he had in bed after the operation, he did not scream, but merely struggled violently.

January 5th.—He had another fit this morning.

6th.—The fit recurred early this morning.

7th.—At four this morning another fit occurred. He says that after his second marriage the fits frequently followed immediately on the act of connection.

8th.—Has had no fit at all to-day.

9th.—Had a very slight attack this morning, scarcely more than a giddiness for a minute. Altogether, since the operation, the fits have been exceedingly mild.—*Lancet*, January 22d, 1859.

2. OBSERVATIONS ON THE TREATMENT OF SOME OF THE SYMPTOMS OF SYPHILIS. By *M. Hervieux.* (*Bulleten de Thérapeutique*, tome liv., pp. 441 and 529.)

1. *Phagedœnic Chancre.*—M. Hervieux observes that it is very natural that a disease which produces such rapid local destruction should have been met by means rivaling it in energy and celerity of action, such as the butter of antimony, the various forms of caustic, the actual cautery, etc. But, although all those means have been successful in some cases, it is certain that they have still oftener failed, or they would not have been so generally abandoned. There is one means, however, which, in the hands of M. Ricord, has proved of indubitable advantage, viz., the *carbo-sulphuric paste*, prepared by mixing sulphuric acid with powdered vegetable charcoal in sufficient proportions to form a semi-solid paste. When applied to the chancre this soon dries, forming a black crust, which intimately adheres to the tissues, and only falls off after several days, leaving a clean sore, or even, in some cases, a cicatrized surface. In the author's practice, pure *tincture of iodine*, applied at the commencement, has proved to be the best means of arresting the progress of the disease. It induces generally a burning pain, the intensity and duration of which are in proportion to the extent and depth of the chancre, as also to the sensibility of the individual and of the parts affected. Very well borne by some patients, the pain induces in others

the most horrible torment. Chloroform would in such nervous and irritable subjects save this suffering. The pain, upon an average, lasts half an hour. In simple, uncomplicated cases, two applications, made by means of a pencil, after an interval of twenty-four hours, generally arrest the progress of the blood. If, however, the chancre be complicated with gangrene, hospital gangrene, or diphtheria, four, five, or even six applications may be required. But when two or three of these seem to be without any effect, there is no use going on with the iodine, and a solution of nitrate of silver (five parts to thirty) should be substituted. When the iodine treatment has been followed, M. Hervieux has never known the worst form of phagedæna persist beyond a week.

2. *Suppurating Bubo.*—The author has never himself treated bubo by small, single, or multiple openings, but he has met with cases which have been so treated, and which, two or three months afterwards, have exhibited fistulous tracks, extensive detachment, thinning and changes in the skin, together with an utter indisposition to heal. After waiting two or three weeks in vain for the spontaneous closure of these fistulæ, he has had to lay them freely open. The prevention of deformity by these small apertures, as proposed by Vidal, is frequently not attained, for not only may fistulous tracks become established, but the apertures themselves may become transformed into chancrous ulcerations. As a general rule, M. Hervieux makes a large opening, and that as early as possible, cicatrization taking place most rapidly under these circumstances. When the opened bubo is transformed into a strumous or chancrous ulcer, or the two combined, with the possible complication of phagedænism, he treats it by the application of the tincture of iodine or solution of the nitrate of silver, washing it out also with chlorine lotions several times a day; and he has never found any ulcer resisting treatment longer than six weeks, the majority becoming healed in from eight to fifteen days.

3. *Condylomata* (*Plaques muqueuses.*)—Although the author believes the practice he recommends under the former heads may require additional confirmation from more extensive practice than his own, in the matter of condylomata he can speak more positively. If the solution of nitrate of silver is not an actual specific, it acts with such rapidity, certainty, and efficacy, as to call for the highest recommendation. However confluent they may be and whatever extent of surface they may occupy, however infectious the discharge they give out, and even when they have attained a certain amount of thickness, provided that they are not too hypertrophied and have not undergone some of the transformations they are susceptible of, they will wither, die away, and disappear in the course of some days, if every part be painted daily with a pencil dipped in a solution of the nitrate, five parts to thirty of water. Baths should be simultaneously used, seeing the part which dirt habitually takes in the production of this accident. Repeated trials have convinced the author that this success is quite independent of internal treatment. When, however, the condylomata have become transformed into a vast vegetating surface, of great thickness, the nitrate ceases to be of avail; and in one aggravated case mentioned, the pure nitric acid, repeatedly applied, was of service.

4. *Syphilides.*—Under this head the author gives the results of his trial, in

ten cases, of M. Cullérier's plan of treating syphilitic eruptions by blisters applied to the chest. Although at first prepossessed against it, he now speaks highly in its favor. Excluding the slight roseolar forms, which get well of themselves, the author oftenest employed blistering in the papular form of the disease, and that is the form in which the remedy best succeeded. A single blister will exert a notable modification on chronic papular syphilides, which have existed during several months. One case of syphilitic lichen, which had lasted a year, and for which all kinds of active internal treatment had been tried, disappeared in the course of a week, during which three large blisters were successively applied to the anterior and posterior surfaces of the thorax. The squamous form resisted their action more, but still in two cases of psoriasis undoubted amendment was observable, and in a fortnight the scales were detached. In the pustular form, some cases of syphilitic acne were rapidly cured. M. Hervieux has not tried blistering in syphilitic impetigo of the face and hairy scalp, having found the application of the nitrate of silver solution, after poulticing off the crusts, very efficacious, even in very inveterate cases.—*British and Foreign Medico-Chirurgical Review*, January, 1859.

3. ON THE TREATMENT OF HERNIA BY ELECTRICITY. By *Dr. Clemens.* (*Deutsche Klinik*, No. 34.)—This paper is the first of a series the author intends publishing upon the therapeutical application of electricity—a subject that has engaged his attention for some years past. He first employed this agent in the treatment of inguinal hernia, in 1850, and has frequently had recourse to it since then. The hernia being reduced, and the patient placed in the semi-recumbent position, the ball of the conductor is carried as far into the hernial canal as possible, and the application of the electricity continued during five minutes, its power being increased day by day. After a few *séances* the mouth of the ring becomes diminished in size, the finger is introduced with more difficulty, and the hernia will not descend so easily as heretofore. The electricity, too, exerts a very beneficial effect upon the peristaltic intestinal motions, augmenting and regulating these, and thus preventing the same relaxed portion of intestine from always lying opposite the hernial aperture. A state of obstinate constipation becomes changed for one of regular action, and many old disordered conditions of the abdominal cavity become relieved. When the hernia has been recently produced, no means act with so much certainty and rapidity; and a case is referred to of a young man who acquired double inguinal hernia during an effort to raise a heavy burden, and which was completely cured after twenty *séances,* although these were not commenced until a week after the accident. Under its agency recent hernia is rapidly returned: but the author has not yet tried it in a case of complete incarceration. Among the twenty-seven cases in which it has been resorted to, none have manifested the slightest ill consequences. Dr. Clemens prefers static electricity to galvanism, and administers it by means of the Leyden phial.

Another application of electricity by the author consists in a galvanic hernia truss, for a description of the construction of which we must refer to his paper. By its agency a feeble but constant galvanic stream is kept applied to the ring, and large hernias soon become easily retained which before had resisted the largest trusses and the strongest springs. Of late, the author has constructed a pile of silver and copper coins, and the effects of so small an apparatus have often surprised him.—*British and Foreign Medico-Chirurgical Review*, January, 1859.

THERAPEUTICS.

1. LIGATURE OF THE EXTREMITIES IN INTERMITTENT FEVER. By *Drs. J. De Brauw* and *H. J. Brœrs.*—According to Drs. De Brauw and Brœrs, the ligature of the extremities is a measure which has been already employed by ancient physicians to aid in the treatment of intermittent fever, but has unjustly nearly fallen into oblivion. Already Pinius (Hist. Nat. xxviii., 6,) knew this antiperiodic, as Pittschaft (Hufeland's Journ., li., 3, pp. 47, 48,) states, and in Van Swieten's *Commentaries to Boerhaave's Aphorisms* the "levis brevisque compressio venarum in artubus," is strongly recommended as a means to relieve the burning heat of fever. Dr. V. Hildenbrand, however, declares the remedy, in his *Institutiones Practico-Medicæ*, to be unreliable, and in many respects unsafe, and recommends caution in the use of it. Jos. Frank (Prax. Med. Univ. Præcepta) speaks of it in a very superficial manner, like many other, particularly more recent authors. One of the most enthusiastic commenders of this method is George Kellie, (Duncan's Medical Commentaries, vol. xix.,) who, during the siege of Willemstad by the French army, in 1793, cured many cases of intermittent fever (which had resisted the use of quinine) completely, by compression of the extremities. Upon his recommendation several physicians in England—for instance, Veitch and Wallich, (Mediz. Nationalzeitung, July, 1798,) and in the Netherlands, (Agemene Vaderl. Lettervefningen, 1808, 5,)—tried his method with signal success. Of the more recent communications on this subject, that of Prof. Chladni (Hufeland's Journal, xlii. p. 133,) is worth particular attention. This celebrated savant being attacked in 1813 by an obstinate intermittent fever, used the remedy with much advantage. He describes it as quite innocuous, and explains its curative influence by the supposition, that by the ligature of the extremities the return of blood to the heart, and to the centres in general, is hindered or partially suspended, and that the full development of one of the principal symptoms, the chill, being thus interfered with, an interruption and disturbance of the whole type of fever takes place.

This method belongs moreover to one of the oldest popular remedies used in Russia, England, and France. In *Canstatt's Jahresbericht*, (Jaborg., 1848, p. 113,) the cure of a quartan by application of Junod's boot is mentioned, a fact which seems to be intimately connected with the subject in question. According to Jolly, (Dict. de Méd. et de Chir., tome xi. part i. p. 363,) who gives a detailed account of the *ligatures circularies des membres*, the ligature should be applied to the four extremities at the same time, but in such a manner that only the circulation in the superficial vessels is suspended. Martinet, Robinau, Récamier, and Husson, kept up the compression for not longer than twenty-five to fifty minutes, and commenced with it in the cold stage. Jolly recommends taking off the ligatures one by one, at intervals of several minutes, as by the simultaneous removal of the same too much blood would be at once introduced into the circulation, which might be attended with evil consequences.

The most complete information on the subject of his investigation the author found in a dissertation of R. v. Bærle: "*De valde multiplici febrium intermittentium medicatione speciatim de membrorum majorum circumstrictione tantaminibus in nosocomio academico explorata*," Utrecht, 1809. In this treatise the ligature of the extremities is thoroughly illustrated by the report of seven cases, and highly recommended. V. Bærle commenced the treatment with the administration of a gentle purgative; the patients were kept in bed, and subjected to a rigid diet during the paroxysm; shortly before the commencement of the cold stage, the thighs and upper arms were encircled by ligatures exercising a moderate pressure, which were removed in from six to fifteen minutes, or later, according to the effect they produced; after Wallich's example he forbade warm drinks during the cold stage, but recommended cold drinks in the hot stage. From observations of this kind the author draws the following conclusions: The ligature of the extremities is a safe and powerful means of assistance in the treatment of intermittent fever; it is not only an adjuvant to other antiperiodics, but also a febrifuge by itself. It cures the febris intermittens simplex and duplex, as well as the quotidiana. In regard to the quartana no experience has been made. The ligatures must be allowed to remain until the hot stage begins; a longer application does not lessen their effect. The method seems to owe its curative property to the disturbance of the usual course of the fever, (Chladni.) Sometimes the paroxysm is transferred under this treatment from the third day to the second, but generally so that the tertian type is not interrupted, or that a febris duplex is developed. The compression of the extremities is always followed by some increase of the heat and perspiration, the signs of an energetic reaction. After repeated use of this method the fever gradually subsides. Contra-indications to it never existed, but may be easily inferred from an examination of the modus operandi of the remedy.

Dr. De Brauw generally applied compression to two extremities only, but considers the ligature of all four far more efficacious in obstinate cases, and recommends the method as being capable in some cases to substitute the use of quinine.

In cases of relapse of intermittent fever, in which the patients complain of that characteristic pain in the lumbar region, (fifth lumbar vertebra,) against which cups are used without effect, Brœrs recommends the application of the galvanic current to the mentioned spot as a highly serviceable, though occasionally inefficient means. After the second or third application of this remedy the cachectic appearance, as well as the depressed feelings of the patients, underwent a favorable change. Relapses of the fever, consequent upon a return of the patient into the malarious district, yielded quickly to this mode of treatment, even when quinine was administered without success.—(*Nederland. Tijdschr.*, 1858, and *Medizinische Neuigkeiten*, 1858, No. 44.)

Editors' Table.

Edibles in Negroland.—In our notice of African edibles in the March number for 1858, we had followed the traveler, Dr. Barth, (in his southern journey,) from Tripoli, on the Mediterranean, as far as Tasawa, in about 13° 40′ north latitude. We shall pursue the same course now as we did then, in mentioning, for the most part in the author's own language, the different articles of food used by the natives of the several districts visited by Dr. Barth, as best illustrating their dietetic usages, rather than to give a formal list of all of the articles eaten by the inhabitants of Central Africa.

Near Tasawa, "the whole country had a most interesting and cheerful appearance, villages and corn-fields succeeding each other with only short intervals of thick underwood, which contributed to give richer variety to the whole landscape, while the ground was undulating, and might sometimes be called hilly." The travelers met a numerous herd of fine cattle, belonging to Gozenákko, returning to their pasture-grounds, after having been watered—the bulls all with the beautiful hump, and of fine, strong limbs, but of moderate size and with small horns. Scarcely had this moving picture passed before their eyes, when another interesting and characteristic procession succeeded—a long troop of men, all carrying on their heads large baskets, filled with the fruit of the góreba, (*Crucifera* or *Hyphaene Thebaica*,) commonly called the gingerbread-tree, which, in many of the northern districts of Negroland, furnishes a most important article of food, and certainly seasons many dishes very pleasantly. Farther on, the fields were enlivened with cattle grazing on the stubble.

At Gozenákko the attention of Barth and his companions was excited by the clamorous offering for sale of a various assortment of the delicacies of the country, by crowds of women from the village. During the whole evening a discordant chime was rung upon the words "nono," (sour milk,) "may," (butter,) "dodowa," (the vegetable paste mentioned in our last notice,) "kuka," the young leaves of the *Adansonia*, which are used for making an infusion with which meat, or the "tuwo," is eaten, and yarn da daria, (the sweet ground-nut, which, when roasted, is one of the greatest delicacies of the country.) "Tuwu," called "fufu" on the western coast, (the common paste or hasty-pudding made of millet, which forms the ordinary food of the natives,) was not offered for sale.

At a well on the road to Kaltena, which is a little below the 13th parallel of north latitude, the travelers were invited to purchase the common vegetables of the country, such as gowaza, or yams, dankah, or sweet potatoes, dodowa, or the vegetable cakes mentioned above, ground-nuts, beans, and sour milk. Near this spot they found, besides the fan-palm, the dumma and kana, and the immense monkeybread-tree, (*Adansonia*,) with its colossal (now, January 30th, leafless) branches, from which the long heavy "kauchi" were hanging down on slender mouse-tail stalks. Here, too, was seen, for the first time, the kadena, or butter-tree, (*Bassia Parkii,*) in the neighborhood of the ayaba, or banana, and the gonda, or papaya. Now and then a herd of cattle were seen dispersed over the rich pasturage-grounds, all of white color, and the bulls provided with a large fat hump, or "tozo," hanging down on one side. A little farther on, we are told that all the cattle were of a white and all the goats of a coffee-brown color. Chemico-physiological reasons have been assigned for the white color of the polar bears and other animals in the arctic circle. What explanation will be offered for the prevalence of this same color among animals in the intertropical regions of Africa?

Cotton and karasia fields interrupted the park-like scenery of this district, in green patches of which wheat and onions were met with.

At Kano, in the twelfth parallel of latitude, among other caravans arriving, was one from Garja, with the desired kola-nut. Numbers of cattle are daily butchered on one side of the market-place. Kano is a great manufacturing town, especially in the weaving of cotton cloths, and the subsequent dyeing of them with indigo, which is cultivated in large quantities in this region. Barth tells us that milk, during the whole of his journey, formed his greatest luxury; but he adds the cautionary advice, that an African traveler should be particularly careful in the use of this article, which is capable of destroying a weak stomach entirely; and he would do better to make it a rule always to mix it with a little water, or to have it boiled. Better is the food which, on his journey to Kukawa, through Bornu, he received, as a "glorious lunch;" it consisted of a well-cooked paste of Negro millet with sour milk. On this route, which is east-northeast from Kano to Kukawa, a district was entered which may be called the exclusive region of the dum-palm or *Crucifera Thebaica*, the fruit of which we spoke of in our last notice. Before arriving at this place Barth received, at a village where he stopped, an immense bowl of milk, and a little fresh butter as cleanly prepared as in any English or Swiss dairy. This was prepared and brought to him by a Fellata,—for all over Bornu no butter is prepared but with the dirty and disgusting addition of some cow's urine, and it is all in a fluid state.

Shortly before reaching Kukawa, a peculiar kind of holcus called masakwa, (*Holcus Cornuus,*) was seen: it forms a very important article in the agriculture of Bornu. Sown after the end of the rainy season in shallow hollows, consisting of black sedimentary soil, it grows up entirely by the fructifying power of the latter, and ripens with the assistance only of the abundant dews, which fall here usually in the months following the rainy season. At Kukawa, as well as almost all over this part of Negroland, the great markets do not begin to be well attended till the heat of the day grows intense. In Yoruba, on the contrary, almost all the markets are held in the cool of the evening. In addition to the daily markets, there is held, every Monday, at Kukawa, a great fair, at which nearly 15,000 people congregate. Here are met with the inhabitants of all the eastern parts of Bornu, the Shuwa and the Keyam, with their corn and butter. The former, though of Arab origin, and still preserving in purity his ancient character, always carries his merchandise on the back of oxen, the women being mounted on the top of it; while the African Keyam employs the camel, if not exclusively, at least with a decided preference. The Kanembu, with their butter and dried fish, are very often seen in the market. All the luxuries offered to the people here are very few in comparison with the varieties of cakes and sweetmeats in the market-places of Hausa, or at Tasawa, Kaltena, and Kano, in the intermediate country. "Kolche," (the common sweet ground-nut,) "gangaola" (the bitter ground-hut,) boiled beans or "ngalo," and a few dry dates from the Tebu country, are almost the only things, besides water and a little nasty sour milk, offered as refreshment to the exhausted customer.

Barth, during his residence at Kukawa, made an excursion to Lake Tsad, or the Tsad, as it is generally called, ten miles distant, in an easterly direction. This led them over swampy plains in which he encountered large herds of "kelara," or antelopes, sometimes swimming, at others running. In a creek the only inhabitants found were the ngarutus, or river horses, which live here in great numbers, snorting about in every direction, with two species of crocodiles for company. At Maduwan, a village on the lake, Barth fared sumptuously, in having for supper fowls and a roasted sheep. In the villages along the shore of the lake are numerous herds of cattle, amounting altogether, it was computed, to eleven thousand head. Before reaching Káwa, the travelers passed over fields planted with cotton and beans. There they were feasted with a kind of "bolóbaló," or water mixed with pounded argum or dukhn, sour milk and meat.

On the route from Kukawa to Yola, which last place is in 9° 10′ N. lat., the travelers were obliged, on the first night, to be satisfied with cold "diggwa," a sweetmeat made of meal, honey, and butter. Farther on they entered a dense forest, where they gathered wild fruits, principally one called "foti," of the size of an apricot, and with three large kernels, the pulp of which was very pleasant. On the following morning they breakfasted upon "chebchebe," a light and palatable Kanuri sweetmeat, and upon "nufu," or habb'el aziz, dug up in large quantities almost over the whole of Bornu. On this route Barth saw again, but in greater abundance than before, the toso, the fruit of the *Bassia Parkii*, which consists almost entirely of a large kernel, of the color and size of a chestnut, which is covered with a thin pulp inside the green peel. This pulp has a very agreeable taste, but it is so thin that it is scarcely worth sucking out. A good deal of butter is prepared from the kernel, which is not only esteemed for seasoning the food of the people, but, also, for medicinal qualities ascribed to it. In the same region he speaks of the katakirri, a bulbous root, sometimes of the size of a large English potato, the pulp being not unlike that of the large radish, but softer, more succulent, and also very refreshing and nutritious. The juice has a milky color. A man, continues Dr. Barth, may easily travel a whole day with nothing to eat but this root, which seems to be very common during the rainy season, in the woody and moist districts of Central Africa. It is no less frequent near the Niger and in Kébbi, than it is here, but it is not seen in Bornu nor in Bmigari.

The *A'danseonia*, or baobab, (mon keybread-tree,) is the most common representative of the vegetable kingdom through the whole of Central

Africa. It is the constant follower of human society, spreading its gigantic branches out like an immense candelabrum. The negro can scarcely live without it; for how could he season his simple food without the baobab's young fresh leaves, or sweeten and flavor his drink without the slightly acid pulp, wherein the kernels are imbedded?

In the eastern quarter of Isege the travelers reached a fine sheet of water of considerable depth, stretching from east to west, and full of large fish, which seem to be of the same kind as that caught in the Tsad. Near the village of Kofa and the banks of a river, they passed by a forest, from which, among other fruits, they procured the toso, or rather its thin pulp, and the beautiful cream-fruit of the gonda-bush, (*Annona Palustris?*) their favorite dainties. Again they found a yellow fruit "gaudi," already referred to; it is of the size of an apricot, with a very thick peel, and, instead of a rich pulp, five large kernels filling almost the whole interior, but covered with a thin pulp of a very agreeable taste, something like the gonda. When speaking of the agreeable cool draughts obtained from the river, Barth adds his own observations to those of so many others on the same subject, in contrasting pure water with the unwholesome stagnant kind procured from pools, and impregnated with vegetable matter, and very often full of worms, so as to form certainly one of the chief causes of disease to the traveler. At the village of Lahaula, there is scarcely a single cow, but much vegetable butter is made; it has also a great deal of excellent honey. In his journeying on he tried the fruit of the deleb-palm, which was just ripe, (June 12th;) but it is not to be compared to the banana, and still less to the fruit of the gonda-tree. It is, however, of importance to the natives, and it yields, like the fruit of the dum-palm, a good seasoning for some of their simple dishes. This latter has an extensive range of growth, through nearly the whole breadth of Central Africa, from Kordofan to the Atlantic.

Ground-nuts form here a very large proportion of the food of the people, just in the same proportion as potatoes do in Europe, and the crops of corn having failed the last year, (1850,) the people had very little else besides. Nature, in these countries, as Barth well observes, has provided everything—dishes, bottles, and drinking-vessels (in the various *cucurbiltaceæ*) are growing on the trees, rice in the forest, and the soil, without any labor, produces grain. Porridge is made from both kinds of the ground-nut, of which the more oily is represented to be the most wholesome. For making oil it is evidently the more valuable of the two. The Fulbe in this part of the country make also a similar porridge of sesamum. Different species of grain are cultivated in different soils. In Mbutude, millet, gero, or *Pennisteum typhoideum* was cultivated almost exclusively; here (in Adamawa) it is the dawa, "bain," (in Tulfulde) or sorghum, and principally the red sort, or "bairi boderi." The ground-nuts are cultivated between the corn, in the same way as beans are in many parts of Negroland. About Budanjo the land is extremely fertile, and besides sorghum or holcus, produced dankah or sweet potatoes, goya or yams, manive, and a great quantity of gunna, a large variety of calabash. At Melago the corn—*Pennisteum* or gero—stood already (June 17th) five feet high. At Chabajaule, the whole caravan fell to the charge of a single household, but, notwithstanding this, sufficient quantities, not only of "nyiro," the common dish of Indian-corn, but even of meat, were brought in the evening.

Rice is cultivated to a considerable extent in the western part of Adamawa. It grows, however, wild in many parts, from the southern provinces of Bornu, Bmigari, and Waday, as far north as El Haudh and Baghena, on the border of the western desert. The country of Tumbina is one of the finest of Central Africa, irrigated as it is by numerous rivers, among which the Benivwé and the Faro are the most important. The grain most commonly grown here, is *Holcus Sorghum*, but in this respect there is a great difference between the districts. Thus the country of the Mbum round Nygaundere scarcely produces anything but ruogo or yams, which form the daily and almost sole food of the inhabitants. Ground-nuts are plentiful both in the eastern and western districts. In the district of Tibati there is great exuberance of vegetation; the traveler sees both kinds of the banana, the gonda or popaya, several species of the giro-tree, the Pandanus, the *Kajilia*, the monkeybread-tree, and the *Banbanx*. Of the Palm tribe, the deleb-palm and the *Elais* Guineensis, (oil palm.) The date-tree is very rare. Among the bushes, the Palma Christi or *Ricinus* is extremely common. Altogether, the predominant tree in the southern provinces of Adamawa seems to be the banana.

On the journey from Kukawa to Kanem, round the north side of Lake Tsad, the travelers came to Yo, the principal food of the inhabitants of which is fish. Cotton and small quantities of wheat are the only produce of this region, besides fish and the fruit of the *Cucifera* or dum-palm, which forms an essential condiment for the "Kunu," a kind of soup made of Negro millet. Here Barth saw a specimen of the electric-fish about ten inches long, and very fat, which was able to benumb the arm of a man for several minutes. As he approached the Tsad the whole country began to be clothed with the sewak, or *Caparis Sodata*. Salt, as we had occasion to say before, is prepared from the ashes of the nuts of this plant: it is, also, procured from a peculiar species of grass growing in the river; and, by the Musgu, from the ashes of the stalks of millet and Indian-corn. In the vicinity of the lake an interesting and an uncommon sight was exhibited in a herd of elephants, no less than ninety-six in number. Turtle-soup made from animals of a small size (probably our terrapin,) was a luxury enjoyed by the travelers. They are most abundant round the town of Air, farther north. In Kanem the travelers accustomed themselves to camel's milk, and found it by degrees more palatable and wholesome than the milk of cows. Barth attributed his recovery from great exhaustion, the effect of fever, to this sort of diet.

Joining a warlike expedition from Kukawa to Mandara, the travelers came to Musa, the chief agricultural produce of which consisted of sweet sorghum, or *Sorghum Sacharatum*, regarded as a luxury by the Africans. Some of the stalks measured fourteen feet; but in the luxuriant valleys of the Kebbe they reach to twice this height! Pieces of the pith or marrow of this plant, which is of a snowy whiteness, was sent, as a dainty, by the vizier. No doubt this variety of the sorghum would yield sugar abundantly; but the sugar-cane itself grows wild in several parts of Negroland, and a small plantation of it, and boiling-houses on a small scale, were carried on by a native in the neighborhood of Sokoto. The deleb-palm, or fan-palm, probably only a variety of the Borassus flabelliformis, is in those regions the most common and predominant representative of the vegetable kingdom. From the Musgu country it seems to spread in an almost unbroken line through the southern provinces of Bmigari and Waday, as far as Kerdofam.

Two African luxuries, in the meat line, are unknown to the civilized palates, viz., the flesh of the giraffe and that of the elephant. The latter is very apt to derange weak bowels.

It is mentioned by Barth, in praise of onions, that, when cut into slices and mixed with tamarinds, they make a cool and refreshing drink.

In the territory of Logon hogs are found in immense numbers. Here, also, corn and tobacco are cultivated in friendly community. Water-melons are grown to some extent, also the squash-gourd, *Cucurbita Melopepo*. The *Croton Tiglium* is abundant in this region.

During his long stay at Bmigari, Barth subsisted almost entirely on a variety of grass, (*Poa Abyssenica*,) with the addition of a little rice. The Poa is very palatable when prepared with plenty of butter, or even boiled in milk.

We glean from the details just given as well as from those furnished in our last article, that, although the food of the great body of the inhabitants, both of Northern and Central Africa, is chiefly vegetable, yet that the dietary of those who can afford it, and especially in the regions of the last-mentioned division, is as various and implies as omnivorous a taste and digestion among them as among ourselves, or in the most favored parts of Europe. Dietetic lessons of this kind, furnished on a large scale, must be more instructive, as they ought to be more authoritative, than the minute and limited observations made on the gastronomic powers of persons leading an artificial and luxurious life.

PROGRESS OF AMERICAN SURGERY IN EUROPE.—It must be highly gratifying to the friends of humanity and of scientific surgery everywhere, to find that the operation for the cure of that loathsome and disgusting complaint, vesico-vaginal fistule, so greatly improved by our countrymen, Drs. Sims and Bozeman, as to entitle them to the gratitude of the whole medical profession, is at present attracting so much attention both in the United States and in Europe. There is hardly a number of any of our foreign exchanges, in the different languages of Europe, that does not contain either an essay upon the subject or an account of some case illustrative of a new triumph. Dr. Simpson, as usual, takes the lead, and in a late number of the *London Medical Times and Gazette*, he has quite an elaborate paper on the treatment of this affection, in which he proposes an improvement upon Dr. Bozeman's method, consisting in the substitution of a wire splint for the metallic button. Dr. Baker Brown has also published an able brochure upon the subject, detailing the successful treatment of eleven cases.

During his recent visit to Europe, Dr. Bozeman received the kindest attention from his professional brethren, and was invited to exhibit his operation in different hospitals, upon the living subject. In London, a case was placed under his charge by Mr. Erichsen, in University College Hospital; at Edinburgh, he operated at the Royal Infirmary of that city, and also in the private practice of Professor Simpson; the doors of the Royal Infirmary of Glasgow were likewise thrown open to him; and at Paris he operated for M. Robert, at the Hôtel-Dieu. Of these cases, three were perfectly successful; in one, the parts reopened at the end of the sixth day; and in another, death occurred from peritonitis. It is proper to add that none of these cases had been properly prepared for the operation, and that Dr. Bozeman had no agency whatever in the the after-treatment in any. The woman operated upon in the Royal Infirmary at Edinburgh was a peculiarly bad subject, having been an intemperate, dissolute creature.

PENNSYLVANIA HOSPITAL.—We regret to announce the resignation of Dr. William Pepper, of the post of Physician to this institution, which he has held for many years to the perfect satisfaction of every one connected with it, and those seeking the benefits of his instructions. As yet, the vacancy has not been filled.

MEDICAL STUDENTS IN THE UNITED STATES.—So far as we have been able to learn, the number of students attending the different colleges in this country during the session of 1858–59, is larger than it was last year. From a published catalogue, we see that 570 were in attendance at the Jefferson Medical College; but we are unable to state the size of the classes at the other schools in this city. From our exchanges, we find the following reports of the number of students at some of our medical institutions, which we believe are reliable:—University of Louisiana, 306; St. Louis Medical College, 135; University of New York, 350; College of Physicians and Surgeons, 180; New York Medical College, 107; Medical Department of Harvard University, 139; Shelby College, 53; New Orleans School of Medicine, 140.

MEDICAL STUDENTS ABROAD.—The number of students who took out inscriptions for 1858–59, in Paris, is 1065, an increase of thirty-eight over last year. Louis Napoleon has determined to elevate the standard of requirements of those entering the medical profession of France, and has, therefore, issued an imperial decree that after April, 1859, all students must be Bachelors of Arts. There are 478 students attending the University of Edinburgh, showing an increase over last year's session.

APPOINTMENTS IN MEDICAL SCHOOLS.—Dr. A. G. Thomas has been appointed Professor of Physiology in the Oglethorpe Medical College, Georgia.

Dr. John C. Draper has been appointed to the Professorship of Analytical and Practical Chemistry in the University of New York.

NEW MEDICAL JOURNALS.—We place with pleasure the following new journals, which have appeared since the first of the present year, on our exchange list:—The *New York Medical Press*, edited by Drs. Kiernan and O'Meagher; the *Semi-monthly Medical News*, edited by Drs. Bemiss and Ben-son, of Louisville; and the *Louisville Medical Gazette,* edited by Dr. L. F. Frazee.

THE MEDICAL AND SURGICAL REPORTER, on the first of the year, appeared under a new guise. Dr. W. B. Atkinson having ceased his connection with it, Dr. R. J. Levis, who is well known to the profession, has become associated with Dr. Butler in the editorship of the journal, which, we are happy to see, has very much improved, both in regard to its contents and its appearance.

AMERICAN MEDICAL ASSOCIATION.—We would remind our readers that the Twelfth Annual Meeting of the Association will be held on the 3d of May, 1859, at Louisville, Kentucky. The Secretary, Dr. A. M. Bemiss, desires that all bodies represented in the meeting will send him a correct list of their delegates so soon as appointed. The convention of professors from the different medical schools throughout the country will meet at the same place the day before the sitting of the Association.

DR. MUTTER'S DONATION TO THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—Early in January last, Dr. T. D. Mütter perfected his agreement with the College of Physicians, by which he gives to that institution his museum, together with his plates and diagrams, to serve as a basis for the "Mütter Museum." Besides this, he endows the college with thirty thousand dollars, to defray the expenses of the museum and to establish lectureships. The College is bound, on its part, to have a fire-proof building completed within five years, for the accommodation of the collection.

DR. THOMAS WATSON.—We are happy to announce the appointment of the distinguished author of the well-known "Lectures on the Principles and Practice of Physic," as Physician Extraordinary to the Queen, in place of Dr. Bright, who has so recently died. This appointment has given universal satisfaction to the profession of England.

SIR BENJAMIN BRODIE.—An unfounded report in one of the foreign periodicals soon gained currency that this distinguished member of our profession had been made a member of the House of Peers. This report has, however, served the purpose of awakening the medical men of London to the conviction that they are entitled to a representative in the Upper House, and they will, no doubt, take action upon the subject, and refer it to Lord Derby, who will give the question an impartial hearing. Without this advancement, Sir Benjamin Brodie now has a higher position than has ever before been held by a British surgeon, having been recently elected President of the Royal Society, and President of the Medical Council. We hope that he may attain this higher honor, to which his high scientific and literary attainments most certainly entitle him.

PRIZES AT THE ACADÉMIE DE MÉDECINE, FOR 1858.—The Academy prize of one thousand francs, on the application of the microscope; the Capuron prize, on the death of the infant during parturition; the Civrieux prize, on the difference between neuralgia and neuritis; and the Barbier prize, for the cure of diseases generally thought incurable, have not been adjudged, on account of deficiency of memoirs, or insufficiency of merit.

M. Bauchet obtained the Portal prize, on the pathology, treatment, and diagnosis of ovarian cysts. The Itard prize, for the best work of two years standing, on practical medicine or applied therapeutics, has been adjudged to M. Duchenne. The Argenteuil prize of twelve thousand francs, on the greatest improvement in the treatment of stricture of the urethra or other diseases of the urinary organs, was not awarded to any one author, but was divided in sums varying from four thousand to one thousand francs among six competitors.

NEW APPOINTMENTS AT THE FACULTY OF MEDICINE OF PARIS.—The Chair of Anatomy, rendered vacant by the retirement of M. Denonvilliers, has been filled by the appointment of M. Jarjavay. M. Gosselin succeeds M. Cloquet as Professor of Surgical Pathology.

LA CHARITÉ.—MM. Andral and Rayer have resigned their positions as Physicians to this institution, which they had so long held with credit and honor.

L'HÔTEL-DIEU OF PARIS.—This ancient hospital is now being demolished, to make room for a new institution in a more healthy location, and for the purpose of providing better sewerage and ventilation, which were the faults of the old building. The Hôtel-Dieu had nearly one thousand beds, and received annually about twelve thousand patients, who were nursed by forty Sisters of Charity, mostly Roman Catholics. The founding of this hospital is said to date back as far as the year 660; but this point is disputed. We extract the following paragraph from the *Medical Times and Gazette*, which will prove interesting to our readers:—

"It is generally believed, but without proof, that the foundation of the Hôtel-Dieu was due to St. Landry, Bishop of Paris, in the seventh century. The canons of Nôtre Dame only possessed at first the half of this establishment; the other part was ceded to them in 1202, by Renaud, Bishop of Paris. At that time not only the poor sick, but also the healthy poor, were admitted into it; it was a hospital in the true sense of the word. Phillippe Auguste was the first king that gave donations to it. We read in one of his letters:—'We gave to the Maison de Dieu de Paris, for the poor there, all the straw in our room and house in Paris, each time that we leave the town to sleep elsewhere.' The increase of population brought an increase of sick, and thus the Hôtel-Dieu became insufficient for their accommodation. In 1217 Dean Stephen, conjointly with the Chapter, charged four priests and four clerks with the spiritual care of it; thirty priests and twenty-five clerks provided for the wants of the sick. Under St. Louis, the hospital was rebuilt and enlarged. It then took the name of Hôtel Nôtre Dame, and was exempt from all taxes. In 1511, the Rue des Sablons was closed, in order to increase its size. In 1531, Cardinal Duprat built a ward, which was called before the Revolution, Salle du Legat. In 1602, Henry IV. constructed the Salle St. Thomas; in 1606, the Salle St. Charles was finished, through the liberality of Pomponne de Bellièvre. Louis XIV., like his predecessors, favored the hospital. In 1772, the accumulation of sick was so great, that as many as eight patients were put in one bed; and on the morrow, almost always three or four were found dead. The mortality rapidly increased, and the Hôtel-Dieu became a permanent source of infection to the city; and this brought about an improvement in its administration. Under the Revolution, the Hôtel-Dieu was rebaptized, and called Maison de la Humanité. The Hôtel-Dieu is now about to be entirely demolished."

NECROLOGICAL NOTICES.

PROFESSOR P. C. GAILLARD, M.D., of Charleston, South Carolina.—We record with profound sorrow, the melancholy and premature death of Dr. Peter Cordes Gaillard, a gentleman well known and greatly respected by the members of our profession in this city, and, indeed, throughout our country generally. It was but in our number for last July that we announced his appointment to the Chair of Institutes and Practice of Physic in the Medical College of the State of South Carolina, filling the vacancy made by the removal of Professor Dickson to the Jefferson College. Great hopes were entertained from his elevation to this responsible post, which he was permitted to hold for so brief a period. For a considerable time past he had been struggling with pulmonary disease, which seemed at least to have suspended its progress. But the grief of losing an infant daughter during the fatigues and annoyances of the last sickly summer and autumn, and the recent death of a near connection and dear friend, proved too much for his powers of resistance and endurance, and of late he sunk rapidly, and died after but a few days' confinement to his house. It was indeed a very little while since he persisted, with manly fortitude, in the performance of his numerous weighty and responsible duties.

Dr. Gaillard was one of the founders and first editors of the *Charleston Medical and Surgical Journal*, which he aided to establish upon a sound and lofty basis, and to which he was always a most valued contributor. He was a few years ago President of the Medical Society of South Carolina, and occupied, in succession, every place of honor and trust to which he would permit himself to be nominated, in all the professional associations of his native State. His addresses, as orator, were always well received and highly lauded. His clinical lectures at the hospital and almshouse are still remembered by the pupils who enjoyed the advantage of attendance upon them, as exceedingly interesting and instructive.

At the time of his decease he was one of the Trustees of the Roper Hospital, of which he had previously been attendant and consulting physician. He was also, from the commencement, Treasurer of the Widows' and Orphans' Society, and had been distinguished for his earnest zeal and faithful enthusiasm in promoting this charity, so important to the unfortunate and afflicted among physicians.

Professor Gaillard commenced his winter course in November, 1858, with the most gratifying anticipations of success and advancement. Already deservedly popular, both as teacher and practitioner, his introductory address gave much satisfaction, and succeeding lectures only tended to confirm every favorable expectation. But, alas! all these hopes are blighted, all these prospects ended by his lamentable death!

In this event our profession has lost one of its strongest pillars; one of its brightest ornaments; a diligent inquirer after truth; a clear thinker; a model gentleman. Gifted by nature with an engaging presence and a fine intellectual capacity, he cultivated this latter with the most conscientious assiduity, while he attracted the love and admiration of all who knew him, by his polished refinement and undeviating courtesy of manner.

Early annoyed by uncertain health, he had successfully struggled with all the difficulties that impeded his outset in life. He had entered upon an extensive and lucrative practice, among the most intelligent and respectable classes of the community, commanding the confidence and winning the universal affection of his patients. He rose steadily in the estimation of his brethren everywhere, and was doubtless destined, had he survived, to fill a large space in the public eye. His election to the Chair of Practice by the unanimous vote of such a body of men as constitute the Board of Trustees of the Medical College of the State of South Carolina, was a bright earnest of his future progress. His native city could have selected no one better fitted to uphold her character for talent and integrity.

And now, all is over, and the grave has closed darkly upon his aspirations after well-merited fame and a career of protracted usefulness and honor. But his memory will ever be green in the hearts of his friends; and while men regard uprightness, truth, intelligence, refinement, and piety, as worthy of esteem and reverence, the name of Gaillard shall not be permitted to fall into oblivion. D.

Dr. Richard Bright.—During the past year, death struck down some of the brightest ornaments that adorned the medical world of Europe, and we have now to record a loss which will be felt by the whole world, to whom its subject was so well known. Dr. Bright, familiar to every one by his writings, more especially upon the connection between disease of the kidney and abdominal dropsy, died in London, in the seventieth year of his age, on the 15th of December, after an illness of five days, of ossification of the aortic valves, which amounted to almost complete closure. The disease was suspected for several years, but as no examination was ever allowed, the extent of involvement was not known until an autopsy was made. Dr. Bright graduated at Edinburgh, in 1813, his thesis being on contagious erysipelas; and his desire for knowledge caused him to seek the great cities of Europe, to gain instruction in the various branches of medicine and surgery. Early in life he evinced a great taste for pathological pursuits, of which he made good use in his works and writings. In 1824 he was appointed Physician to Guy's Hospital, having previously filled the post of Assistant Physician. His contributions to medical periodical literature are very extensive and valuable, and are for the most part to be found in "Guy's Hospital Reports" and the "Transactions of the Medico-Chirurgical Society." In connection with Dr. Addison, he began a text-book, entitled "Elements of the Practice of Medicine," only one volume of which ever appeared. His "Reports of Medical Cases," in two royal quarto volumes, contain much valuable information on the pathology of fever, as well as of the kidneys, lungs, cerebral, spinal and other nervous affections. The first of these appeared in 1827, the other four years subsequently. Dr. Bright was undoubtedly the most prominent British physician of his day, and has left his name connected with granular disease of the kidney, the importance of which affection he was the first to point out. At the time of his decease he was Physician Extraordinary to the Queen.

DR. J. C. W. LEVER.—This promising physician died in London, on the 29th of December last, of disease of the heart, in the forty-eighth year of his age. As Physician-Accoucheur to Guy's Hospital, and Lecturer on Midwifery at that institution, to which he was appointed in 1845, he rapidly rose to eminence and usefulness in his peculiar department. He was the author of an excellent essay upon Organic Diseases of the Uterus, for which he obtained the Fothergillian gold medal in 1843, and contributed many valuable papers to *Guy's Hospital Reports*, the *London Lancet*, and other periodicals. His name is familiar to Philadelphians, as an honorary member of the College of Physicians.

OUR London exchanges also bring us the intelligence of the death of M. BONNET, a distinguished surgeon of Lyons, and author of several valuable treatises on surgical affections. He is well known by his works, "On Sections of the Tendon," "On Disease of the Articulations," "On the Practice of Cauterization," etc. M. Bonnet was about fifty years of age, and died after a short illness. The medical men of Lyons intend erecting a monument to his memory.

M. BÉRARD, Professor of Physiology at the Faculty of Medicine of Paris, has recently died of apoplexy. On account of illness, he had not been able to lecture for three years, although he pursued his physiological investigations.

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THE
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MAY, 1859.

Analytical and Critical Reviews.

Art I.—*The Transactions of the American Medical Association.* Instituted 1847, vol. xi. Philadelphia: 1858, 8vo., pp. 1027.

To present a satisfactory review of a volume of the size of these Transactions—embracing so wide a range of subjects and of so diversified a character—a review that shall do justice to the authors of the several reports and essays of which the work consists, and, at the same time, offer a careful investigation of the opinions and facts advanced, and a fair exhibit of the actual contribution these transactions furnish towards the advancement of medical science and skill, would demand much more space than can, with propriety, be spared in a periodical journal such as ours. We can do little more than give a general outline of the facts adduced, and the doctrines inculcated in the more important of the papers which compose the volume before us.

We pass over the minutes of the proceedings of the eleventh annual session of the Association, with the simple remark that they are invested with special importance, inasmuch as they exhibit in bold relief the vast and beneficial power the Association is capable of wielding by the exercise simply of the moral influence it holds over the medical profession of our country generally as well as over its individual members.

The proper business of the session was formally opened by an admirable address from the retiring president, Dr. Paul F. Eve. In this address Dr. Eve presents a rapid sketch of the leading objects of the Association, and the extent to which these objects have been thus far carried out through its instrumentality. The entire address was well conceived, and produced a very decided impression by the very eloquent manner in which it was composed and delivered. We entirely agree with Dr. Eve as to the paramount importance of the work to be performed by the American

Medical Association, its capacity to accomplish that work, and the certainty of its ultimate success in the achievement of all the purposes for which it was organized. The Association is now too firmly established and too efficiently organized; it already exercises too powerful and wide-extended a moral influence to allow it to fear the opposition of the most influential persons or local associations within the limits of the profession. We do not hesitate to indorse the declaration of Dr. Eve that the Association has been already "a most active and powerful agent in disseminating useful medical knowledge" throughout this continent; that, in all probability, "no similar institution has ever been more successful than it in carrying out its chief object—the promotion of science."

A careful examination of the eleven volumes of Transactions of the Association will show that they embrace a vast mass of valuable matter, the production of the greater portion of which has been mainly, if not entirely, elicited by the efforts, or, at least, the influence and encouragement, of the Association. Through its agency important facts and principles have been widely disseminated throughout our country, and valuable hints suggested for future investigations, which cannot fail to result, sooner or later, in a profitable addition to our knowledge in every department of medical science. It is very certain, as Dr. Eve remarks, "the American Medical Association has been no failure." It is very true that all the reforms it was instituted to bring about have not been as yet accomplished. Through its instrumentality has neither medical education nor medical literature been elevated to its proper standard in this country; nor do all the papers embraced in its published transactions bear that character for originality of views, depth of research, and excellency of execution which could be desired. Nevertheless, with all these admissions, we maintain that the Association has been eminently successful in "encouraging emulation and concert of action among physicians, and fostering friendly intercourse in the profession." "It has far exceeded," to use the language of Dr. Eve, "the most sanguine expectations, in overcoming all opposition; in creating an admirable code of ethics now adopted everywhere; in organizing state, county, and city societies; in bringing together physicians from the remotest of our immense territory; in awaking the whole profession to its true interests, and in binding us into a common harmonious fraternity;" which, had the Association effected nothing more, should have commanded for it our respect and gratitude. But the good that has been done by and through it exceeds that told above. Through its exertions the general government have been induced to institute measures for preventing the importation of worthless, adulterated, and effete drugs and medicines, and several of the States to adopt laws for the registration of births, marriages, and deaths, while a reference to the professional facts spread out upon the pages of its several volumes of printed transactions will prove how "extensive, varied, and valuable are its contributions to medical science."

The first three of the reports in the volume before us are on Medical Topography and Epidemics for the State of Kentucky, by Dr. W. L. Sutton; for the State of New Jersey, by Dr. Lyndon A. Smith; and for the State of Ohio, by Dr. George Mendenhall.

The first of these reports presents an interesting account of "the jerks," or, as it has been somewhat improperly styled, "epidemic epilepsy." This really curious affection bears a very close resemblance to certain of the convulsive epidemics which prevailed throughout a large portion of the continent of Europe during the middle ages, and which have been so graphically delineated by Hecker.

The disease as it prevailed in Kentucky was consequent upon a great religious excitement which occurred throughout the State, from 1799 to 1805. It was remarkable alike for the extent of the country over which it prevailed, the number of persons of both sexes and of all ages beyond puberty affected by it, and the strangeness and variety of the convulsive and other morbid nervous phenomena by which it was attended. We agree with Dr. Sutton, that the history of these strange affections, which prevail from time to time, with all the leading characteristics of an epidemic, is equally interesting to the physician and to the psychologist.

In this report we have also an account of "milk-sickness, or sick stomach," to which some have given the appellation of malignant fever. The account was drawn up by Dr. James H. Barbour, of Falmouth, Kentucky. Dr. Sutton has added to it some pertinent remarks in reference to the etiology, pathology, and treatment of the disease, derived partly from reading, and partly from oral information communicated by those most conversant with it.

Dr. Sutton does not believe that any relationship, as to cause and effect, exists between the so-called "milk-sickness," in the human subject, and the "trembles," in cattle. In other words, he denies that it is produced by partaking of the milk or flesh of animals laboring under any special or other disease, and includes it among the maladies which have a strictly malarial origin; he believes it to be closely related to the bilious autumnal fever of certain unhealthy localities.

Appended to the report of Dr. Sutton are ten tables. The *first* showing the population of each county of the State, the number of acres each contains, with the proportion improved and unimproved; the number of acres to each inhabitant; the average number that die annually of cholera, dysentery, fevers, scarlatina, and zymotic affections, and the proportion of deaths from each of these diseases to the population in each county. The *second* table exhibits the annual average mortality of the limestone regions of the State, the average number of deaths in these regions from each of the diseases included in the first table, and the proportion these deaths bear, in each case, to the whole number of deaths from ascertained causes. The *third* table presents the same series of facts in respect to the coal regions. The remaining *seven* tables indicate the color, sex, and age of those who died of cholera, croup, dysentery, continued fevers, fevers generally, scarlatina, and hooping-cough.

The general facts to be derived from a careful analysis of these tables, which appear to have been compiled with great care, are both interesting and important. A similar series of tables for every location in each State of the Union would afford us valuable materials for the investigation of the etiology of those diseases which occur as endemics of particular districts or neighborhoods.

In the report on the epidemic diseases of New Jersey, we find some general conclusions drawn up by its author, Dr. Smith, in respect to the subject of vaccination. To the correctness of nearly all these conclusions we can bear ample testimony.

It is very true, as Dr. Smith remarks, that when there occur, after vaccination, violent inflammation, pain, and swelling, with the production of a large pustule in the arm, and considerable affection of the axillary glands, there is by no means the same certainty of a genuine and permanent infection as when the results of vaccination are of a less intense character. We should never, in fact, pronounce any case in which a genuine *pustule* is produced on the arm, one of true and perfect vaccination. It is proper to remark, however, that our experience has taught us the correctness of the views of most of the German vaccinators, who insist upon the necessity in vaccination of producing a certain intensity of impression upon the system, to insure a complete and enduring protection in the patient against an attack of smallpox. We cannot, therefore, admit the correctness of the position laid down by Dr. Smith, that the production of a "*very small*" vaccine vesicle is in all cases to be preferred.

The report on the epidemics of Ohio is a very concise one. It is chiefly confined to a general consideration of the diseases of the year 1855. It presents no points of prominent interest beyond a notice of the fact that the disposition to bowel affections, which had prevailed throughout the State, to a greater or less extent, and with more or less intensity, from the year 1848 until 1854, had disappeared, and been replaced by a very general prevalence of periodic fevers; confined in 1855 to the months intervening between June and October.

The report of the Committee of Medical Literature follows next in order. It is drawn up by Dr. A. B. Palmer, of Chicago, Illinois. It contains many pertinent and sound observations in reference to the character and amount of the professional literature of the United States, the obstacles which have heretofore prevented its increase and improvement, and the means best adapted for its encouragement in the future. Upon the whole, however, the reporter deals with his subject in general rather than special terms, and, consequently, arrives at no specific and positive conclusions.

Compared with the medical literature of England, France, or Germany, that of our own country is confessedly of small account, whether viewed in reference to its extent or its intrinsic value. When, however, we take into account how short a period, comparatively speaking, has elapsed since the first settlement of these United States; how sparsely populated they still are beyond the immediate limits and neighborhood of a few of our Atlantic and Western States; the nature of the pursuits into which the masses with us are necessarily thrown, and the peculiar influences under which are placed the pioneers in the settlement of a new country, and those who are engaged in bringing it into a condition adapted for the successful development of its resources—all of which circumstances are adverse to purely literary and scientific pursuits,—a full and accurate review of the medical literature of our country, from its earliest colonial history to the present time, will, we are persuaded, exhibit a much more favorable result in respect to the amount and character of the original contributions from the physicians of America than many would seem to be aware. They have not, it is true, produced many works which it will do to compare with those invaluable monographs on special subjects within the range of our science, for which we are indebted to European authors, and but few systematic works in any of the departments of medicine and its collateral sciences, which, in fullness and completeness, are equal to those which come to us from beyond the Atlantic. American physicians have, nevertheless, furnished their quota to the general fund of medical knowledge, and have aided, to an extent equal to their respective opportunities, in the advancement of almost every branch of the healing art, and are now busily occupied in building up a national medical literature, to meet the constantly-increasing demand for it on the part of the medical profession of the country.

In investigating the medical literature of the United States, we shall find a very great scarcity of independent treatises by American authors. None, in fact, of any imposing pretensions previously to the last fifteen or twenty years. The most important and valuable contributions of our physicians, with very few exceptions, are to be sought for in the pages of the leading professional journals, which, from an early period of our national existence, have constituted, in a great measure, the library of the

American physician; certainly of the majority of those the most extensively engaged in practice out of our larger cities. The importance, even at the present day, of well-conducted medical journals, to the profession throughout the country, cannot be too strongly insisted upon; these publications present an easy medium of communication, through which may be effected a ready interchange of the facts and observations collected, and the conclusions arrived at by the physicians of every portion of the United States and of Europe, and the wide diffusion of these contributions to the general fund of medical knowledge, at short intervals and at so trifling an expense as to render the labors and experience of each member of the profession, both here and abroad, promptly available for the instruction of all. Medical journals form, also, convenient reservoirs for the reception and preservation of a mass of facts, which, in their isolated form, are of comparatively little value, but which, nevertheless, are to be ranked among the materials essential for the repair of the errors and for supplying the defects of existing medical theories and modes of practice.

To give to our professional journals the usefulness we have claimed for them, to render them faithful and ready mediums of intelligence—channels for the prompt dissemination of the improvements made in the different departments of medicine; to enable them to become a correct and vivid reflection of the actual knowledge and opinions of the entire profession, requires that they should be conducted by able, enlightened, and independent editors—skillful to detect whatever of merit the various articles submitted for publication may possess, and possessed of the moral courage that will enable them to reject the valueless and insert the good, irrespective of any considerations connected with the name, standing, and connections of their respective authors.

While a strict censorship should be exercised by the conductor of a medical journal over the matter and the tone of whatever articles are admitted to its pages, so that wild speculation, imperfectly observed facts, and observations of very doubtful accuracy shall be carefully excluded, as well as even the shadow of misrepresentation or injustice toward the labors of others, a very great degree of leniency should be observed in respect to mere inaccuracies or inelegancy of style, such, at least, as do not involve any gross violation of grammar, or vulgarity of manner, or lead to a degree of obscurity calculated to confuse or mislead the reader. From the degree of influence they exercise over the opinions and practices of a large and interesting portion of our profession in this country, medical journals must be ranked as among the most important means for the promotion of domestic medical literature. In every point of view in which they can be correctly contemplated, they deserve our hearty support when ably and honestly conducted.

The following is a brief résumé of some of the leading positions advanced in the report:—

"The periodical literature of the United States is regarded as possessing great abundance, variety, richness, and general excellence, and though still possessing defects, is constantly improving. Many of the contributions are of great weight and value, indicating an enterprising and industrious profession. Serious defects are regarded as existing in the review department, arising mainly from the fact that the income of the journals will not justify pecuniary disbursements for literary labor, and editors necessarily engaged in other pursuits cannot command the time, if all possessed the ability to do the work thoroughly and well. A few well-supported journals, in place of the many but illy sustained, might tend to correct this evil; but the multiplicity of local journals is considered as peculiarly beneficial, by collecting from a greater variety of sources a larger number of facts, and developing the powers of a larger number of writers. The interests of this part of our literature demand a more prompt and liberal pecuniary support.

"The number of original American medical works is increasing, and their character is improving, and in some respects, in practical utility, they will not suffer in comparison with those of Europe; yet serious imperfections exist, and decided improvements are demanded. Great and permanent improvements in medical, as in general literature, must be gradual, depending more upon the advancement of education, of taste, and intelligence, than upon any specific measures which may be adopted. Still, various particular measures, such as the frequent writing of medical theses during professional pupilage, and keeping systematic records of cases when in practice, would do much in hastening on improvement. But, for the greatest perfection of our literature, we must wait the fuller development of our country, and for those changes of time and circumstances which shall produce a larger number of devoted savans and scholars, placing them in situations where a variety of absorbing pursuits will not prevent the concentration of great talents upon a comparatively limited range of subjects.

"Respecting the reprint of foreign works, it is held that while the free circulation of the best class of these books among us increases the knowledge and improves the taste of the masses of the profession, it does not interfere with the production of the higher order of original works, and that the moral obligation of our government to join with Great Britain in the enactment of an international copyright law, is by no means clearly established."

There is great truth in the following remarks:—

"Our locality has an influence upon our character, our science, our literature, and our claims upon others. We are upon a new continent, have a vast territory, are in neighborhood of imperfect governments. We have much to subdue, to regulate, to establish. We have great internal seas and extended rivers, which, together with our railroads, invite to travel, to change, to commerce. Our people are from diversified sources. They have relations with all parts of the world, and possess extended knowledge of its affairs. The material and practical are thus pressed upon us. Our youth, as a nation, has been sufficiently referred to.

"With all these practical duties and affairs, we have not yet had time to perfect many great scholars. Amid the multiplicity of objects of thought and action which surround us, we have not yet found time for the minuter study of any limited number. This country is not now the place for the development of the individual in limited and special directions. But it is the place for giving individuals a wide range of knowledge, though less minutely and perfectly, and it is also the place for the diffusion of knowledge among the whole people, and, as previously stated, it is above all others the place for making the knowledge of others, the results of others' labors practically useful, of showing the diversified applications and the practical value of scientific truths. In this we excel. Here, in the great economy of improvement, is our sphere. This is our place in the great brotherhood of science and art. This is our position in the republic of letters. We have, then, in this economy a fixed place, and a manifest destiny. That place we must maintain, and that destiny fulfill. We may be charged with appropriating the materials, the results of the labors of others. We do, and we must thus appropriate. Our necessities and our destiny demand it. We must have knowledge cheaply, freely, unobstructedly. The *masses* of our profession and the *people* must have knowledge. In the great family of enlightened nations we are the last born. Our scientific and literary wants are beyond our own capacity to supply. In our youth we must be sustained. The mother that bore us, our elder brothers, must help us. We are already making a return, particularly in the department of practical results. Scarcely a patient in Europe submits his flesh to the surgeon's knife, but has the keen anguish averted by our own discovered anæsthesia. Perpetual incense of praise and thanksgiving ascends to God and America for this great boon. In our very first lispings we taught the people of Europe to avert the lightning's stroke, and in later, but still youthful accents, we have instructed them to make that lightning do their bidding. We are, then, in our youth making some returns to the present Europe, but, in our manhood, we shall make greater returns to the future humanity. In our growing youth we may appropriate more than we yield. In our full maturity we shall yield more than we appropriate. We may be borrowing of the present, but we are paying at least our annual interest, and the full principal and interest, compounded at that, shall be returned, followed by heavy advances to the future humanity."

The report on Medical Education follows. It is by Dr. James R. Wood, of New York.

If all the physicians throughout the United States would agree among themselves as to the nature and extent of the knowledge and other qualifications necessary to be possessed by such as claim admission into the ranks of the medical profession to entitle them to an entrance, and adopt some uniform test by which the possession of the requisite qualifications could in every case be certainly determined; if they would then uniformly withhold all professional intercourse and countenance from such as assumed the name and office of physician without having been subjected to the test, and been proved by it worthy, there would be no difficulty in respect to the schools, for they would be at once forced to bring up their course of instruction to the standard demanded by the profession. So long, however, as we admit the right of each medical school to fix the nature and extent of the professional education necessary to obtain admission for its pupils into our profession, to confer upon any one whom they please the authority to practice medicine, it will be in vain to attempt any decided reform in medical education in this country, or to establish any uniformity in respect to the qualifications of our physicians throughout a single State—leaving out of question the entire Union. The regulation of the terms of admission into its ranks must be undertaken by the medical profession itself, and so soon as its members shall become alive to a true sense of their own interests, they will find themselves fully qualified for the task of defining the line of separation between the legitimate practitioner of medicine, and they who assume the office without due preparation for the faithful performance of its duties—a line that would not fail, ultimately, to be recognized by the public, and to become an effectual barrier against the invasion of the proper rights and interests of the profession by the ignorant and unprincipled.

From the recommendation embodied in the report before us, in respect to a convention of delegates from the medical colleges of the United States, "for the purpose of devising a uniform system of medical education," we can scarcely anticipate any very favorable results. The conclusions of Dr. Wood as to the plan of medical instruction demanded, are as follows. So far as the plan is set forth, we have no especial objections to urge against it:—

> "*First.* Primary medical schools should be encouraged, but, as office instruction will continue to be sought for by students, practitioners should either give them the necessary advantages of demonstrations, illustrations and recitations, or if not prepared to do so, they should refer them to such primary schools, or medical men, as will give them proper instruction.
>
> "*Second.* The number of professorships should not be less than seven, viz.: a professor of anatomy and microscopy, physiology and pathology, chemistry, surgery, practical medicine, obstetrics, and materia medica.
>
> "*Third.* There should be but one term annually, which should commence *about* the first of October, and close with the March following, thus lengthening the term to six months. The commencement of the term, in October, should be uniform in all the colleges throughout the country. During the session there should never be more than four lectures given daily.
>
> "*Fourth.* The qualifications for graduation, in addition to those now required in the schools, should be a liberal primary education, and attendance upon a course of clinical instructions in a regularly organized hospital."

The next report in order is on Spontaneous Umbilical Hemorrhage of the New-born, by Dr. J. Foster Jenkins, of New York State. The subject is a most interesting one, and which has only of late received the attention it justly demands. The report of Dr. Jenkins will be found to embrace a very good analysis of all the facts found upon record calculated to throw light upon the history of umbilical hemorrhage in the new-born, its pathology and treatment, with the addition of a series of observations derived from his own experience and that of several of his medical friends. The leading particulars of all the cases that have come to the knowledge of the reporter, are presented in tabular form.

In respect to treatment, Dr. Jenkins considers the safest and most reliable to be that recommended by P. Dubois, of Paris; that is, to transfix, with two harelip-needles, (one being passed horizontally and the other perpendicularly,) the integuments at the base of the umbilicus, and then to pass several times, around the needles, in figure of 8, a waxed thread. The needles may be removed on the fourth or fifth day, but the eschar should be allowed to separate spontaneously without any attempt being made to hasten its detachment. Although the ligature *en masse*, as thus described, will occasionally fail, in common with all other means, to arrest the discharge of blood in cases of spontaneous hemorrhage from the umbilicus of young infants, it should nevertheless be resorted to without delay, from the fact that it is more to be depended on than anything else that has been employed in these cases.

The report on the Influence of Marriages of Consanguinity upon Offspring, by Dr. S. M. Bemiss, of Louisville, Kentucky, recommends itself to the candid consideration of every class of the community. If it can be satisfactorily shown that upon the offspring of intermarriages between blood relations are liable to be entailed mental or physical imperfections or diseases, it then becomes an all-important question, not merely with the philanthropist, but with every enlightened statesman, what are the means to be adopted in order to prevent the marriage of the consanguineous? To determine with certainty whether any, and if any, what deleterious influence is exercised upon the offspring by such marriages is, however, a somewhat difficult task. To do so it is necessary to ascertain the number of offspring born, with and without any physical or mental deficiency or disease, in each community, and in each class of that community, during a long series of years, first of parents between whom there is no relationship of blood, and secondly, of parents in whom such relationship does exist, taking into account, in both cases, the occupations, habits, conditions, and hereditary predisposition of the people of each community and class. By then comparing together the results in the two cases, some definite conclusion in respect to the influence of marriages of consanguinity upon the children born of them, may be arrived at.

So far as the report goes, it presents a mass of valuable materials for the solution of the problem submitted to the committee from whom it emanates. Dr. Bemiss has collected the facts bearing upon the condition of 3942 children, namely, 1509 males and 1411 females born of 833 marriages of consanguinity. Of these children, 1134 were defective, 145 deaf and dumb, 85 blind, 308 idiotic, 38 insane, 60 epileptic, 300 scrofulous, 98 deformed; 833 died young, and 53 were sterile, thus showing that only 838 of these offspring of marriages between blood relations were free from some defect or disease.

We return our thanks to Dr. Bemiss for what he has done in elucidation of the question under consideration, and we trust that his attention, in common with that of other physicians, will continue to be directed to the subject, with a view to the accumulation of a mass of direct and comparative statistics adapted to settle definitely the influence which the marriage of the consanguineous produce upon the offspring born of such marriage; whether a single intermarriage between blood relations is sufficient to entail upon the children a defective physical and mental organization, and a proneness to certain diseases, or whether this baneful influence upon the offspring is not rather the result of repeated intermarriages between the descendants of those related by blood.

A short report follows on the Functions of the Cerebellum, by Dr. E. Andrews, of Chicago, Illinois. Though confessedly imperfect, it is still of a character to command attention, and will repay an attentive perusal.

The theory advanced by the author is, that the lateral lobes of the cerebellum, which are, properly speaking, the posterior, preside over the muscles of the posterior group, while the median lobe exerts its influence upon those of the anterior group. In support of this theory, the following propositions are advanced, the truth of which Dr. Andrews endeavors to establish by reference to an anatomical examination of the cerebellum in different warm-blooded animals:—

> "1. In the warm-blooded animals, the median lobe, or vermiform process of the cerebellum, varies in size directly as the bulk and power of the anterior group of muscles.
>
> "2. The lateral lobes vary in like manner, as the power of the posterior group of muscles, subject, however, to certain variations hereafter to be mentioned."

In reference to these exceptions, Dr. Andrews remarks, that while the lateral lobes have a certain correspondence with the posterior groups of muscles, they have a no less striking ratio with the size of the hemispheres of the brain, and the rank of the animal in the scale of intelligence.

"There are, therefore," according to Dr. Andrews, "two conditions governing the lateral lobes as to size, which may be illustrated by three propositions:—

"1. If the animal have large complex hemispheres of the brain, and, at the same time, very powerful posterior muscles, then both these conditions unite in demanding large lateral lobes of the cerebellum, and these organs, in fact, attain, under such circumstances, their maximum development."

This is illustrated by a reference to the cerebellum of man and the dolphin.

"2. If the hemispheres of the brain be of a low grade, but the posterior extremities be still powerful, then the deficiency in one condition is balanced by the excess in the other, and the animal will have lateral lobes bearing a moderate ratio with the median."

Illustrated by a reference to the cerebellum of the kangaroo, agouti, wild rabbit, and porcupine.

"3. If the animal have cerebral hemispheres of decidedly inferior development, and at the same time posterior limbs which are feebler than the anterior, then both the conditions will coincide to reduce the lateral lobes to a bulk less than the median."

Illustrated by a reference to the cerebellum of birds, moles, bats, of the sloth, etc.

The facts deduced from the examination of the cerebellum in a large number of the mammalia leads, Dr. Andrews believes, to the following conclusions:—

"1. The division of the cerebellum which we have been considering, is traceable from the reptiles up to man.

"2. The typical position of the lateral lobes is posterior to the median.

"3. The median lobe has some function connected with voluntary motion, and its influence is expended chiefly upon the muscles of the anterior half of the body.

"4. The lateral lobes exert a similar influence over the muscles of the posterior half of the body, and they are also in some way connected with the mental functions, inasmuch as they are developed, to a certain extent, in direct ratio with the intelligence of the animal.

"5. The *nature* of the influence exerted by the cerebellum upon the muscles is not very clear. Although it may be true, that through it the mind co-ordinates the muscular action, yet that is *not* true which is stated by Carpenter and others upon the subject, viz., that the size of the cerebellum is in a direct ratio with the number and variety of co-ordinated movements which the animal is capable of exercising. Within the limits already explained, the size of the cerebellum is *directly as the quantity and power of muscular fibre to be moved*, with no regard whatever to the simplicity or complexity of their combinations."

Dr. Andrews admits that the foregoing conclusions indicate simply *the direction* in which the facts of comparative anatomy point, but are not in themselves decisive, unless they shall be confirmed by a new and full examination of the facts derivable from experiment and from pathology.

In the next report, that of Dr. Mark Stephenson, of New York, on the Treatment best adapted to each Variety of Cataract, we find nothing new—nothing with which every well-instructed ophthalmic surgeon is not, or at least ought not to be perfectly familiar; but little, in fact, of importance, that is not more clearly and accurately laid down in all the leading treatises on surgery. So far as the report presents us with the personal experience of its author, it possesses, of course, a certain amount of interest. And yet in making up our judgment as to the operation to be adopted in each case that presents itself, we are to be guided, not simply by the kind of cataract that is present, but also the kind of eye in which the cataract exists, the age, general health and constitutional tendencies, and the particular influences under which the patient to be operated on is placed.

The succeeding report is on the Medical Jurisprudence of Insanity. It is drawn up by Dr. C. B. Coventry, of Utica, New York. The subject of which it treats is in all its bearings a most important, and, at the same time, most difficult one. Its interest is not confined to the physician and criminal jurist and judge, but extends to the community at large. It is, in fact, assuming every year a character of deeper, wider, graver import in its bearings upon the safety, in person and property, of each citizen, and in its reference to the humane and faithful administration of the laws. The plea of insanity is at present urged in almost every case to shield from conviction, not merely such as are arraigned in our courts of justice for criminal violence and homicide, but such also as stand accused of crimes against property: it is essential, therefore, that the true line of discrimination should be drawn between those who assume a character of insanity as a cloak to screen them from the punishment of their evil deeds, those who though actually deranged in mind are nevertheless capable of judging between right and wrong, and such as, by reason of their mental derangement are rendered irresponsible agents, and should not be treated as criminals, but rather as fit subjects for one of those asylums in which, while they are restrained from doing mischief, an effort may be made to restore them to "their right mind."

In the report before us, we are presented with a general sketch of the pathology, classification, and tests of insanity; a brief consideration of the plea of insanity in criminal cases; the kind and degree of mental derangement that should warrant the depriving of an individual of his liberty or the management of his estate, that should invalidate a contract or will made by him, or avoid responsibility for crime; a word is said in respect to feigned insanity, and some judicious remarks are appended in respect to the testimony of skilled witnesses in courts of justice. Under each of these heads there will be found much to instruct.

We have next, from the pen of Dr. E. Jarvis, of Massachusetts, a report on the Law of Registration of Births, Marriages, and Deaths. It is replete with judicious suggestions calculated to render the registration more perfect, and to extend it to other States than the few by which it has been already adopted. To the report is appended a nosology for the mortality of 1850, prepared from De Bow's list of diseases for the use of the Census Department of the United States; a nosological classification; the classification and nomenclature of diseases according to Dr. Wm. Farr, of London; and a list exhibiting the principal causes of disease, classified and arranged in the order in which they have been considered proper for statistical purposes.

The report which follows is on the Nervous System in Febrile Diseases, and on the classification of Diseases by the Nervous System. It is a somewhat elaborate and certainly most able inquiry into the agency of the nervous system in the production of those groups of morbid phenomena which, in consequence of their almost invariable concurrence, have been erected by the nosologist into separate and distinct forms of disease.

The author of the report, Dr. H. F. Campbell, of Georgia, is already favorably known to our readers as the first who pointed out the existence of an excito-secretory nervous function, and by his deductions in reference to the influence of the several portions of the nervous system in the production of the various pathological conditions of the animal organism.

Setting out with the general proposition that "all morbid actions are more or less influenced in their manifestations by aberrated nervous action," he attempts to show that "as in the nervous system we recognize two grand departments, viz.: First, the cerebro-spinal system, all the normal actions of which are subject to cessation and interruption; and secondly, the ganglionic system, all the normal actions of which are of a *continuous* and *uninterrupted* character, so in the manifestations of febrile disease we distinctly recognize two grand distinguishing characteristics, respectively typifying the normal actions of these two symptoms of nerves. Thus a character of *paroxysm* obtains in certain cases, while a character of *continuousness* as plainly marks the others." And again, that—

> "As in the cerebro-spinal system we find that its normal action pertains almost exclusively to sensation and to motion, with only a secondary and comparatively remote influence (which we have termed excito-secretory) upon nutrition and secretion, while in the normal action of the *ganglionic system* the entire function is known to preside over nutrition and the secretions, so in *paroxysmal fevers* do we find intense pain, modified sensation, and symptoms allying them to neuralgia and convulsive diseases very prominent, while in *continued fevers*, modified nutrition and altered secretion are the marked and most prominent characteristics."

We cannot pretend to follow Dr. Campbell in his illustration of the foregoing propositions, nor in his application of them to the establishment of a correct neuropathic system of pathology. Much less can we spare time and space—even had we the inclination—to enter upon a critical examination of the truth of his general propositions, or the correctness of all the views he has based upon them in respect to the characteristics of diseases and their proper classification.

Much of the report is necessarily occupied with a retrospective view of the opinions held by distinguished pathologists in respect to the immediate subject of inquiry, or which have a more or less direct bearing upon it. From these Dr. Campbell has drawn valuable materials adapted to illustrate and confirm the theory he has advanced, as the one which most satisfactorily interprets the complex phenomena of fever, and traces these to their true dynamic sources, so as to establish upon the latter a proper basis of classification.

It would not be correct to say that Dr. Campbell has succeeded in building up a full and satisfactory pathology of the febrile affections, it being to these his attention has been chiefly directed in the present report. All that can be truly conceded to him is the credit, and this, we may remark, is no trifling one, of having rendered probable the position that it is upon some one or other portion of the nervous system that morbific agents act primarily, and, according as these agents affect chiefly or entirely some portion of the cerebro-spinal, or the ganglionic system of nerves, will be the nature of the disturbance produced by them in the organs, and tissues, and fluids of the body, and the character of the morbid phenomena thence resulting. In a word, the credit of having rendered it more than probable that the several portions of the nervous system have, each of them, a special agency in determining the direction and kind of morbid action that shall occur in any given case, when an individual is exposed to either of the causes of disease.

Even in this limited sense the labors of Dr. Campbell will afford us no little aid in the establishment of a true system of pathology, one that will be able to reconcile some of the contending and apparently inconsistent truths which have been adduced in support of opposite views of the nature and cause of the morbid states of the solids and fluids of the animal organism, of the vices of structure and disturbances of function observed in disease.

The following "tabular arrangement" of diseases presented by Dr. Campbell, will convey to the reader some general idea of the pathological views advanced by him:—

"NEUROSES.—Diseases in which any portion of the nervous system may be recognized as the *primary dynamic source of either their functional manifestations, or their structural changes.*

"CLASS 1. CEREBRO-SPINAL NEUROSES.—All paroxysmal. The cerebro-spinal system primarily affected. Produced by causes generally of an atmospheric origin, introduced into the blood. May also be excited by any irritation, whether peripheral or central, as urethral irritation, wounds, furuncles, etc., and as in case of injuries of the nervous centres.

"*Order* 1. CEREBRO-SPINAL APYREXIÆ.—Little or no aberration in the chemical changes going on in the tissues. Altered nutrition and secretion rarely manifested. The characteristic of this order is the *absence of excito-secretory action* as a general thing, though it is occasionally manifested in each one of them.

"Genus 1. *Neuralgiæ.*—Affecting the sensory portion of the cerebro-spinal system. These have been variously divided in accordance with their location, character, etc. etc.

"Genus 2. *Spasmi.*—Affecting the motory or excito-motory portion of the cerebro-spinal system. These are specifically arranged, also, in accordance with their characters and locations, as—

"Species 1. *General Convulsions.*
  a. Tetanus,
  b. Epilepsy, etc.

"Species 2. *Partial Convulsive Affections.*
  a. Pertussis.
  b. Spasmodic Croup.
  c. Spasmodic Asthma.
} More frequently marked by excito-secretory action in one form or another, than the rest of this genus.

"*Order* 2. CEREBRO-SPINAL PYREXIÆ, or CEREBRO-SPINAL FEVERS.—The characteristics of this order is, that they manifest strikingly the law of *periodical excito-secretory* action in every possible form, as by periodic aberrations in the secretions, circulation, and nutrition in the chemical changes, and, consequently, in the changes of animal temperature. They are *par excellence* the *excito-secretory neuroses*—allied to the cerebro-spinal apyrexiæ by pain and convulsive symptoms.

"Genus 1. *Cerebro-Spinal Fevers of Many Paroxysms.*—Generally endemic. The paroxysms or exacerbations continue to return at stated intervals, unless prevented by appropriate therapeutic measures. The effect of each paroxysm is to produce or to increase congestions in one or more of the organs, by excito-secretory action; by frequent repetition these congestions become true engorgements. Both the congestions and engorgements permanently derange the functions of the organs in which they occur. Hæmatopoiesis is interrupted and deranged, the patient becoming in time œdematous and pale. Did we consult these local congestions, these fevers might be arranged as would respect the popular, but rather superficial and objectionable, distinction of brain fever, lung fever, bilious fever, intestinal, gastric, etc. A marked characteristic of the genus is, also, their tendency to hebdomadal periodic relapses.

"Species 1. *Intermittent Fever.*—*Complete* subsidence of febrile symptoms during the intervals between *paroxysms.*

"*Varieties* 1. Quotidian.
  2. Tertian.
  3. Quartan, etc.

"Species 2. *Remittent Fever.—Partial* subsidence of febrile symptoms during the intervals between *exacerbations.*

Varieties 1. Quotidian.
2. Tertian.
3. Quartan, etc.

"APPENDIX TO THIS GENUS.—These may be either intermittent or remittent, or they may be epidemic or sporadic.

1. Pneumonia.
2. Pleuro-pneumonia.
3. Influenza, pharyngitis, etc.
4. Cholera infantum.
5. Dysentery, etc.

"Genus 2. *Cerebro-Spinal Fevers of a Single Paroxysm.*—Nearly always epidemic. Closely allied to malarial fever, and to the apyrexiæ, by pain, convulsive symptoms, etc. Far transcend the malarial forms in the destructive changes wrought in the blood, and in the tissues of the organs. Length of paroxysm, from twelve to seventy-two hours. The paroxysm does not repeat itself after having entirely subsided. Often marked by remissions.

"Species 1. *Yellow Fever.*
Varieties unknown, or not fully determined.

"Species 2. *Dengue Fever.*
Varieties unknown, or not fully determined.

"CLASS II. GANGLIONIC OR SECRETORY NEUROSES.—All of a continued or non-paroxysmal character. All refer *directly* to the ganglionic system as the dynamic source of the phenomena—all of them, whether apyrexic or pyrexic, are produced by causes which can generally be recognized as being of a specific nature. Some of them are contagious, others not so. They are either epidemic or endemic.

"*Order* 1. GANGLIONIC APYREXIÆ.—The interstitial chemical changes giving rise to increased animal temperature, not manifested.

"Species 1. *Simple Diarrhœa.*—Sporadic and endemic.

"Species 2. *Asiatic Cholera.*—Epidemic.

"Order 2. GANGLIONIC PYREXIÆ, OR GANGLIONIC FEVERS.—As their name indicates, the characteristics of fever are well marked. Interstitial chemical changes abundant, resulting in high temperature. Each one of the order is self-limited in its duration.

"Genus 1. *Typhoidal Fevers.*

"Species 1. *Typhoid Fever.*
Varieties 1. Thoracic form.
2. Abdominal form, etc.

"Species 2. *Typhus Fever.*
Varieties not arranged.

"Genus 2. *Exanthematous Fevers.*
Examples 1. Scarlatina.
2. Rubeola.
3. Variola, etc. etc."

We have next a well written, carefully digested, and able report on Moral Insanity in its relations to Medical Jurisprudence, by Dr. D. Meridith Reese, of New York.

In examining in its several bearings the subject of his report, with a view to deduce its true medico-legal importance, Dr. Reese discusses the following questions:—

> "I. What is 'moral insanity,' as defined by those who have introduced the term into our medical nomenclature, and who seek to connect it with our jurisprudence, and obtain its recognition by our tribunals of morals and law?
>
> "II. Wherein does 'moral insanity' differ from 'moral depravity,' in any case in which 'intellectual insanity' does not coexist?
>
> "III. If insanity, whether intellectual or moral, be the result of physical disease in the brain, either functional or structural, are not the distinctions into partial or monomaniacal insanity, into mental and moral, wholly fabulous and visionary?
>
> "IV. In deciding all questions of responsibility and punishability, ought not the only distinction to be between *sane* and *insane?* The responsibility and 'punishability' of the insane is prohibited by every code of law and morals, whether divine or human. The *sane*, and none else, are responsible and amenable to punishment, while the contrary may be infallibly predicated of the *insane*, whether the insanity be physical, intellectual, or moral."

Moral insanity, in the sense in which the term is generally employed and understood by those who insist upon the recognition of such a form of mental disease, may be defined "a perverted state of the natural feelings, affections, inclinations, temper, the moral disposition and impulses existing without any illusion or hallucination, and with a more or less weakened, impaired, or uncultivated state of the intellectual faculties. The perversion of the feelings, propensities, and moral sense being to such an extent as to subjugate the will and hurry the individual, upon the spur of appetite, passion, or interest, by an irresistible impulse to the commission of crime, at which his judgment and his conscience, provided they were left free to act, would revolt."

Does such a state of things ever exist? If facts oblige us to reply in the affirmative, then we have certainly a form of moral insanity, the presence of which ought to be a sufficient plea for unaccountability—unpunishability. Dr. Reese denies the existence of any such separate perversion of the moral feelings and propensities—of the moral sense. According to him, the supposition of moral insanity coexisting with intellectual sanity, is a fable, unless *moral depravity* and *intellectual* purity can govern in the same mind at the same time, which he properly denounces as a mental and moral absurdity. He contends that—

> "1st. Insanity is a *mental* phenomena, symptomatic of a *physical* disease, having its seat in the *brain*, and hence can neither be *intellectual* nor *moral* ex-

clusively, but necessarily involves both *thought* and *feeling*, for the reason that the *mind* is the *source*, and the *brain* is the *organ* of both.

"2d. No alleged insanity, which is not preceded or accompanied by *positive disease in the brain*, of which the physical signs are cognizable and demonstrable, should be regarded by our courts of civil or criminal jurisdiction, as justifying the judgment, either of *incapacity* or *irresponsibility*.

"3d. When any disease of the brain is proved to exist, and a perversion or alienation of the moral or intellectual functions of the mind is present, while the subject is unconscious of any change in his mental or moral status, in all such cases insanity exists to an extent demanding impunity from the penalty of any law, and the protection of society, as well as the safety of the insane subject, requires that he be committed to the custody and remedial influence of an asylum or hospital until his restoration to health and a sound mind is satisfactorily established by competent and adequate proof.

"4th. All alleged 'moral insanity,' if unaccompanied by the preceding and simultaneous proofs of disease of the brain by characteristic symptoms, should be regarded as *moral depravity*, for which, as well as for its consequences, the party should be held accountable to the law.

"5th. No metaphysical or psychological theory of 'irresistibility,' or the loss of 'moral freedom,' should receive the countenance of our profession, in the absence of unequivocal evidence of physical disease involving the brain.

"6th. Neither 'delusion,' 'illusion,' 'hallucination,' 'systematic design,' 'knowledge of good from evil, or right from wrong, or that the act was lawful or unlawful, or contrary to the laws of God and nature,' or 'impassivity,' or 'hereditary taint,' can be safely relied on in deciding upon responsibility or irresponsibility, the presence or absence of disease in the *brain* being the only true criterion of sanity or insanity.

"7th. In all cases of acquittal from crime, on proof of insanity, perpetual restraint upon liberty during life, by committal to an asylum, or until full proof of entire recovery, should be secured by *statute law*. The confinement of insane convicts should be in a separate and distinct institution, nor should they ever be admitted to the asylums or hospitals for other insane patients.

"8th. Medical psychology, especially in its relations to judicial inquiries on the subject of insanity, should be made an integral part of medical education, and clinical teaching should be introduced into every asylum for the insane, as a measure of public policy, the duty to devolve upon the superintendent of each.

"9th. Until a general provision is secured for the education of all students in medical psychology, no physician who has not special qualifications, both by study and practice in this department, should consent to give testimony in cases of alleged insanity, unless after consultation and concurrence with an acknowledged expert. The reputation of the profession will else be jeoparded, if not compromised and destroyed, by indiscreet opinions, which the courts are obliged to overrule, or which are often notoriously disapproved."

Much good sense and sound practical wisdom seem to us to pervade the whole of the foregoing conclusions. To admit that "moral insanity," in the very loose sense in which the term is used by many, is a sufficient cause for the acquittal of an individual charged with the commission of crime, would be, in our opinion, to open a wide door for the escape of the morally depraved from the just punishment of their evil deeds, and which, without having any tendency to further the cause of true humanity, will rather promote than diminish the prevalence of crime.

A report on Stomatitis Materna is presented by Dr. D. L. McGugin, of Iowa. This disease, which has so frequently been observed in females during pregnancy, or the period of lactation, especially the latter, and which has claimed the attention of many acute observers who have given to us very full and interesting accounts of it, with their views of its nature and causes, though prevailing unquestionably more frequently in certain countries and districts of country than in others, is, we suspect, however, of occasional occurrence wherever there are pregnant women and nursing mothers. That it is not formally noticed by certain physicians of large practice in particular localities, is no evidence that they had never met with it, but rather that they looked upon it in the light of an affection of the buccal mucous membrane, to which others are equally as liable as pregnant and nursing females, when exposed to certain morbific causes. Dr. McGugin insists that the disease is *sui generis*, attacking only the female during pregnancy or lactation; when existing independent of either of these conditions, it being always the "continuation of an invasion first made" during one or other of them. In support of this opinion he has, however, adduced no satisfactory evidence.

In all the cases of stomatitis materna that have occurred under the notice of Dr. McGugin, the patients were of a strumous habit, presenting unequivocal indications of the presence of scrofula or of a tuberculous diathesis. The predisposition is, in all probability, due in every instance to a debilitated or broken-down constitution.

The exciting causes are, according to the author of the report before us, *pregnancy* and *lactation*, but prominently the latter. He supposes, and with some show of truth, that the disease is the immediate result of "some error or perversion of digestion and nutritive assimilation," and that pregnancy and lactation, especially the latter of these conditions, act as its exciting causes, by perverting or interfering with the due performance of these functions.

> "The change," he says, "takes place in stomatitis, in the blood; and the process of nutrition, which is the prominent feature in the sex, is interfered with, for other pressing demands must first be answered. The organized material being withdrawn or applied to another purpose, the tissues to which it rightfully belongs suffer from the want, and become impoverished. Softening of these structures must follow, and to this again will be added ulceration as a consequence of innervation. The circulation being feeble in structures thus deprived of heir nutrition, will become congested, and ulcerative inflammation follows."

This, no doubt, is all very correct; but we suspect that in most instances we have, as predisposing and exciting causes of the disease, certain debilitating agents besides the constant drain from the system caused by suckling. Such as cold and dampness, malaria, deficient or unnutritious food, grief and anxiety, want of out-door exercise, etc.

The treatment recommended by Dr. McGugin is one adapted to increase or supply the nutrient principles of the blood, to prevent all unnecessary waste of the strength and vigor, and to relieve the lesions of the mouth and fauces. Daily out-door exercise, nutritious diet, porter, ale, and malt beer, tepid bathing, dry air, cleanliness, and cheerfulness; in extreme and lingering cases, weaning the child. As internal remedies, nitrate of silver, iodide of iron, hydriodate and chlorate of potassa, vegetable tonics, hypophosphite of soda, subnitrate of bismuth, etc. etc.

On the True Position and Value of Operative Surgery as a therapeutic agent, is the theme of the report next in order. It is drawn up by Dr. J. B. Flint, of Louisville, Kentucky, and places the subject on a just basis.

The late Dr. Physick was accustomed to remark, when commencing the operative department of his course of lectures on surgery, that the skill of the true surgeon is not based upon the number and boldness of his operations, but rather upon the frequency with which he is enabled, having a due regard at the same time for the best interests of his patients, to dispense with the use of the knife. It is true that cases occasionally occur in which a surgical operation, involving even positive and permanent maiming of the body, is, no doubt, absolutely necessary in order to preserve the life, or reinstate the health of the patients. Surgical operations are, nevertheless, to be viewed as the lowest and least desirable of all our therapeutic agents. As remarked by Dr. Flint, "in regard to almost every instance of its exercise, the place of operative surgery is among the 'last resorts' of practice. Not until we have exhausted all other means of defending life or member against the attacks of disease, are we warranted in resorting to those terrific operations which seldom save without pain or danger somewhat commensurate with their expected benefits."

Dr. Flint's denunciation of what he denominates "*dramatic*" surgery, the so-called "exploital" and "heroic," is at once manly and well timed. We fully agree with him that such operations, got up with a view to attract attention, and gain for the performer credit as a "bold operator," "should be scrutinized very carefully before they are reckoned among the legitimate agencies of the art, or allowed to become the criteria of professional ability or merit." "The fascinations of 'dramatic surgery' are dangerous to professional morality, and mischievous to society, and we should endeavor to replace them by just and rational views of the operative proceedings of our art."

An interesting description of a New Method of Preserving Membranous Pathological Specimens is next given by Dr. R. Arnold, of Savannah, Georgia. The method of Dr. Arnold is to attach the specimens to the surface of a plate of window-glass, and, when dry, covering them with a coating of white varnish.

A short letter follows from Dr. E. D. Fenner, of New Orleans, embracing some remarks on the non-efficiency of quarantine as a means of preventing the occurrence of yellow fever.

We now come to the two prize essays, the one, by Dr. Austin Flint, of Buffalo, New York, on "The Clinical Study of the Heart-sounds in health and disease;" the second, by Dr. Montrose A. Pallen, of St. Louis, Missouri, on "Vision, and some of its anomalies, as revealed by the ophthalmoscope."

The essay of Dr. Flint is marked throughout by that closeness of observation and cautiousness of deduction for which all his contributions to the medical sciences are distinguished. We sincerely regret that we are prevented from giving to the paper that consideration which the importance of the subject itself, and the able manner in which it is discussed, would seem to require. Having already transcended the limits assigned us for the length of our review, we can do nothing else than present the summary of conclusions relating to the heart-sounds in disease, as drawn up by the author of the report.

"1. The two elements which compose the first sounds of the heart, viz., the valvular element, and the element of impulsion, may be affected conjointly but unequally, or one element may be affected exclusively of the other, and either may be extinguished while the other remains.

"2. Of the two sounds which unite to form the valvular element, viz., the mitral and the tricuspid, the former may be abnormally diminished in intensity, or extinguished, while the latter continues, and its intensity is in some instances greater than in health. When this is the case, injury or destruction of the mitral valves is indicated. An abnormal intensity of the tricuspid sound, under these circumstances, denotes hypertrophy of the right ventricle, and there will probably be found, at the same time, exaggeration of the *pulmonary* sound of the heart.

"3. To determine whether weakness or extinction of the mitral valvular sound be due to injury or destruction of the mitral valves, or to diminished muscular power of the heart's action, this sound is to be compared with the element of impulsion. If the latter element, over the apex of the heart, be well marked, while the valvular element without the left nipple be feeble or wanting, it is to be inferred that the mitral valves are more or less seriously damaged. This inference, however, is not to be drawn if it be suspected that the mitral sound is not appreciable or imperfectly heard, in consequence of the intensity, roughness, or diffusion of a coexisting murmur.

"4. On the normal intensity of the mitral valvular sound, when a murmur is present, referable to the mitral orifice, may be predicated the opinion that the abnormal changes, giving rise to the murmur, have not as yet compromised seriously the integrity or function of the mitral valves.

"5. When morbid conditions exist, organic or inorganic, which intensify the *first* sound of the heart in hypertrophy and functional disorder, the intensity of both elements of this sound is increased, but the element of impulsion is exaggerated disproportionately to the valvular element. So, also, when the muscular power of the heart is weakened by any cause, the auricular valves remaining unaffected, the element of impulsion is enfeebled more than the valvular element, and the latter is sometimes lost when the former is still appreciable. Both elements, however, may be extinguished by causes which weaken the muscular power of the heart, while the *second* sound continued to be heard in different situations.

"6. If, from any cause, the *first* sound be weakened so as to extinguish the element of impulsion, but not the valvular element, this sound, in duration and quality, resembles the second sound. When this is observed over the apex of the heart, where the element of impulsion is most marked in health, it does not follow that the heart is dilated. Weakness of the systolic movement is alone indicated, and this change in the duration and quality of the *first* sound at the point stated, occurs in cases of great hypertrophy as well as dilatation, if the muscular power of the organ be sufficiently impaired. The same change may occur when the muscular power of the heart is impaired by fatty substitution, softening, and by dynamic causes.

"7. Abnormal intensity of the element of impulsion occurs when the muscular action of the heart is increased from any cause. Mere abnormal intensity may not indicate more than the increased action due to functional excitement, but if the *first* sound be notably prolonged and dull, characters which depend on the element of impulsion, hypertrophy is indicated. The absence of these characters, however, is no evidence against the existence of hypertrophy, since the muscular power of the organ may be diminished to an extent to weaken and even extinguish the element of impulsion when the organ is greatly hypertrophied.

"8. The *second* sound of the heart being constituted by a valvular element alone, is not subject to modifications which are practically important, except as regards its intensity and the degree of valvular quality. It may be exaggerated, weakened, or extinguished, and the valvular quality more or less marked.

"9. The *second* sound emanating not from one source, but consisting of an aortic and pulmonary sound, which are distinguishable from each other in certain situations in health, the abnormal modifications may relate to either, exclusive of the other. The aortic and pulmonary sounds may be separately increased or diminished in intensity, and each may be extinguished, the other remaining.

"10. Extinction of the aortic sound, the pulmonary sound not being suppressed, denotes destruction or very serious injury of the aortic valves. This conclusion is corroborated by the presence of a murmur referable to the aortic orifice.

"11. Abnormal weakness of the aortic sound denotes injury to the aortic valves, especially if an aortic murmur be present, provided that this weakness be not attributable to mitral contraction or regurgitation, or to impair muscular power of the heart. The presence or absence of mitral disease may generally be determined by the presence or absence of a murmur referable to the mitral orifice; and to determine whether the weakened aortic sound be due to impaired muscular power of the heart, this sound may be compared with the pulmonary sound, which, in health, is feebler than the aortic. Evidence of enfeebled action of the heart is also obtained by observing the *first* sound. The *second* sound of the heart, however, is comparatively much less affected by the various conditions which involve impairment of the muscular power of the organ, than the *first* sound.

"12. On the normal intensity of the aortic sound may be predicated an opinion that the aortic valves are sound. When this sound is found to retain its normal intensity, in connection with a diastolic murmur, the fact renders it probable that the murmur is produced by the direct current of blood through the mitral orifice, and not by aortic regurgitation. When the normal intensity of this sound continues in connection with a systolic murmur referable to the aortic orifice, it shows that, although a lesion exists in this situation, it has not, as yet, led to serious change of the valves.

"13. Exaggerated intensity of the aortic sound occurs in cases of hypertrophy affecting the left ventricle, so long as the muscular power of the organ is not impaired. This alone, however, is not a sign of hypertrophy, for the sound is also exaggerated when, from any cause, the power of the heart is increased.

"14. Abnormal modifications of the pulmonary sound relate, so far as their importance practically is concerned, to an increased intensity of this sound. When it is found to be relatively more intense than the aortic sound, it denotes either that it is positively exaggerated, or that the aortic sound is abnormally weakened, or both these conditions may exist. If the aortic sound be not abnormally weakened, greater relative intensity of the pulmonary sound is evidence of hypertrophy of the right ventricle. In connection with this exaggeration, the tricuspid portion of the valvular element of the first sound will be likely to be intensified. Whether a greater relative intensity of the pulmonary sound be due to a positive exaggeration, or to diminished intensity of the aortic sound, or to both combined, it is generally observed in cases of mitral disease, attended by either obstruction or regurgitation. This rule, however, is not without exceptions."

In noticing the essay by Dr. Pallen, on Vision, and Certain of its Anomalies, we scarcely know what language to employ. As an able digest of our present knowledge in regard to the anatomy and physiology of the parts concerned in vision, it does credit to its author, and would be an appropriate and valuable chapter for a treatise on physiology, or introductory to a work on ophthalmic medicine. Dr. Pallen has collected, with no little industry and skill, the observations and opinions of the most authoritative of those who have in modern times investigated with the greatest success the structure and functions of the eye and its appendages; but, in respect to neither of these subjects has he presented anything original—any new facts, or new deductions based upon the facts of others. We confess that we cannot see a single claim which the author of the essay before us can base upon it to entitle him to a prize of one hundred dollars.

It may be that Dr. Pallen may claim the credit of having presented a more full and exact description of the ophthalmoscopical phenomena of the diseased eye than is to be met with in any of the works which are within the reach of the generality of practitioners; but even if this should be admitted, the essay before us can scarcely lay claim to the kind and degree of merit we ought to expect in the papers honored with the prizes of the American Medical Association.

ART. II.—*Observations on Diphtheritis.* By W. F. WADE, B.A., M.B., T.C.D., Physician to the General Dispensary, formerly Resident-Physician to the General Hospital, Birmingham. 8vo. London: John Churchill, 1858.

Diphtheritis: A Concise Historical and Critical Essay on the late Epidemic Pseudo-Membranous Sore-Throat of California, etc. etc. By V. J. FOURGEAUD, M.D. 8vo., pp. 44. Sacramento, 1858.

WHAT is diphtheritis—what is the form of disease thus named in these two essays from the antipodes—the one just issued from the Sacramento press, the other from New Burlington Street, London? Do the writers treat of the same morbid affection thus showing itself in opposite hemispheres, or do they use one word to convey different meanings? Let us analyze the pages before us, and extract in brief the instruction they convey.

Mr. Wade sets out apparently with the view to establish "a foregone conclusion," which he announces clearly enough in his preface, the essential presence of albuminuria as an element of the epidemic of which he treats, and which he distinctly maintains to be identical with the diphtheria of Dr. Farr, the diphtherite of Bretonneau, the malignant ulcerous sore-throat of Fothergill, the cynanche maligna of Cullen and Johnstone, the angina suffocativa of Bard, and the gangrenous sore-throat of Chomel. It would be tedious to enumerate the other titles by which he assumes it to have been designated at other times, and by other authorities. He proposes these novel views as "a basis upon which to erect a pathological and ultimately a therapeutical structure."

The name accepted generally, as it is by our author, was originally assigned to the disease by Bretonneau, of Tours, from its most obvious characteristic—the exudation of a plastic or pellicular deposit on the mucous surface of the fauces and pharynx—after the Greek *Διφθὲρα*, a skin membrane. Farr calls it diphtheria, an innovation against which Mr. Wade protests with some learned objections.

His description of the attack, a full and graphic one, can scarcely be abbreviated without injustice. He dwells upon the symptoms of general or constitutional disorder which mark the invasion; directs our attention to the local characteristic affection soon supervening; "the discomfort rarely amounting to pain in swallowing; the enlargement of the tonsils, generally of a dull-red color, and studded with whitish specks; the follicles may be dilated, giving rise to the impression that the tonsils are ulcerated; or the whole mucous membrane of the tonsils, soft palate, back of the pharynx, uvula, hard palate, and even portions of the tongue and cheeks may be covered by a thick tenacious film." This false membrane is naturally "white or whitish, but may acquire a dark hue from imbibition of blood, or colored drinks, or desiccation. It may be removed sometimes, so coherent is it, in large patches, by means of the forceps, and the membrane beneath, to which it is more or less adherent, will be found of a shade from dull purple to fiery red, and tumefied. The fetor of the breath, so much spoken of, is not universal; it depends, probably, sometimes at all events, upon partial decomposition of the lymph or fluids secreted by the mucous membrane." A red papular eruption, of brief duration, uncertain period of appearance, and limited extent, may attend; diarrhœa often presents itself; "the urine is generally pale, rather scanty, but to the eye normal; occasionally, however, high colored, and loaded with lithates." The glands of the neck are apt to become enlarged and painful, and may suppurate; "an acrid offensive sero-sanguinolent discharge issues from the nose, the angles of which ulcerate, the ulcers being coated sometimes with lymph, as are also the surfaces of blisters when they have been applied.

"The patient not unfrequently dies when the disease is apparently very slight, or when convalescence is well established or even seemingly almost complete. This feature of the complaint it is which especially renders it disagreeable to treat and difficult to manage." "Croupy symptoms occur finally in almost all fatal cases, whether at first they were slight or severe." "A purpuric condition is often manifested in the later stages, with hemorrhage from the nostrils, bowels, or kidneys." Regurgitation of fluids through the nose when attempts are made to swallow, and a nasal tone of voice, which belong to all periods of the attack, may persist for a long time after the patient is in other respects well. "The duration of this disease is very uncertain; its most fatal period is from the sixth to the eighth day, but the patient may linger on, and finally die several weeks from the commencement of the attack. Children are chiefly, but not exclusively, its subjects: "it is usually epidemic; spring and autumn are most favorable to its ravages."

All readers who have examined the subject, have found it difficult to draw clear lines of distinction between several forms of disease which present in common this affection of the throat: thus between scarlatina anginosa and malignant sore-throat there has always been confusion, and we have seen that our author recognizes the identity of diphtheritis with the latter. Bretonneau, while he admits the pathological relations of his diphtherite with scorbutic gangrene of the gums and croup, strenuously denies that there is any connection between it and scarlatina. The diagnostics upon which he lays special stress, however, are both uncertain: the characteristic appearance of the exudation in each; and more particularly the contrasted relation to croup which he affirms of the two affections. "Finally," is his strong phrase, "finally, there is a more important differential characteristic of the scarlatinal inflammation of the pharynx; it has not any tendency to propagate itself into the air-tubes."

Our author, while doubtless regarding diphtherite as a separate and specific disease, disposes briefly and impartially of both these assumptions of his French predecessor. "The condition of the fauces," he says, "affords no reliable distinctions between the two diseases." He then goes on to establish, by abundant authority, the coincidence of croup with scarlatina, or its supervention during the course of that exanthem, and concludes that there have happened "epidemics of malignant sore-throat undoubtedly congeneric with scarlatina," as well as "others, such as that at Tours, or the present one, in which this connection is less manifest and perhaps questionable."

Mr. Wade next sets himself to establish "the production of false membranes or fibrinous exudation by an inflamed surface, and examines the question whether the older writers were right in calling the appearance which they described, *sloughs.*" Fothergill maintained that there was real "mortification of the substance, not a crust or coat of foreign matter." Our author, regarding the fact of ulceration as unimportant in this connection, and the fetor already spoken of as "no criterion," lays principal stress on the absence of any history of destruction of the soft parts, and denudation of the palatial bones, some or all of which must have repeatedly happened in the course of such gangrene; and decides that "Fothergill and others must have mistaken exudation on the mucous membrane for sloughs of this substance."

In the chapter on Symptomatology we find the malady divided into three stages: *first,* the initial; *second,* that in which the exudation has appeared in the throat; and *third,* the terminal, indicating the conclusion, whether favorable or the "reverse."

1. The initial symptoms, varying greatly in degree, are such as "usually attend febrile disorders—chilliness, anxiety, giddiness, nausea, and vomiting." Our author sets down as important points, that the initial

fever is almost invariably present; that the febrile reaction is "out of proportion to, I mean less than, the preceding depression or rigors; that it precedes the faucial exudation; and that it bears no proportion whatever to the amount of the exudation." "That it is really lymph spread upon the mucous membrane is proved, first, by microscopical examination, which shows it to consist of the fibrillar and corpuscular elements of plastic lymph in varying proportion, and by stripping it off, leaving the membrane perfect underneath." Dr. Laycock, in examining "the pellicle formed on the tongue and fauces of a case of diphtheria or diphtherite, found the sporules and mycelium of the *oidium albicans*, a parasite fungus, found also in muguet, the epidemic aphtha or diphtheria of infants in France." Dr. Laycock, as we conceive, mistaking consequence for cause, ascribes the production of this pellicle "to the action of the parasite on the enfeebled mucous surface of the mouth and fauces. It acts," he goes on to say, "like all its tribe, as an irritant, inducing increased formation of epithelial scales and effusion of mucus, exudation corpuscles, or plasma, intermingled among which are the sporules and mycelium of the microscopic fungus." Mr. Wade found in a similar case "the minute alga *Leptothrix buccalis* in great quantity, but not a trace of the *oidium.*"

We pass, of necessity, over many of the details of symptoms and their progress, carefully noted and recorded by our author, and come to the point upon which turns the chief interest of his inquiries, in his own estimation. This was the discovery of the presence of albuminuria—the correctness of which observation has been since confirmed, he tells us, by many medical gentlemen whose names are referred to, "indicating a connection between diphtheritis and acute desquamative nephritis. The specific gravity of the urine varies, but it may be laid down pretty certainly that there is a diminution in the total amount of solid excretion; or, in other words, that the special functions of the kidneys are interrupted. Although the urine is often perfectly pellucid and free from deposit, yet in some instances we find what I should certainly be disposed to anticipate in all, viz., tube casts and renal epithelium. The tube casts may be of three forms: first, small waxy casts; secondly, casts of similar size, but granular, probably from commencing disintegration; and thirdly, ordinary epithelial casts. Besides these objects, and perhaps even more common than these, are small masses of irregular shape, of fibrin, not moulded in the renal tubes; epithelium also from the bladder, etc. The tube casts and the glandular epithelium often contain fat in a state of subdivision more or less minute."

The next inquiry, and an important one doubtless, is as to the value, prognostic and therapeutic, of the discovery thus alleged to be made. Albuminuria is not a fatal symptom; the quantity of albumen in the urine is generally proportional to the functional disability of the kidneys, a sign of a condition interfering with their physiological activity. "We must not overlook the possibility of the renal offices being supplemented by other organs." Mr. W. mentions two chronic cases, "one of which died at the end of five weeks, and the other did not begin to amend till nearly eight weeks after the first invasion; in both these the albuminuria was present and persistent, until a day or two before death in one which was fatal, and in the other its disappearance was the first indication of returning health."

Roche speaks of a case which lasted for eight months; another is given on the authority of Girouard, of two years continuance. In neither of these do we see any notice taken of the urine; and, indeed, it may be doubted whether such instances present any other than the mere local affection. We had under our care a lady whose throat was coated for fully six months with a thick yellow buckskin exudation; the constitutional symptoms subsided after ten or twelve days, leaving her with pharyngeal uneasiness and dysphagia, occasioned by the persistent presence and prompt reproduction when removed, of this tenacious pseudoplasm.

Our author seems disposed to ascribe to uræmic poisoning the peculiar phenomena described as presenting themselves in bad cases everywhere: Cullen's "symptoms of putrid fever," Bard's "great and sudden prostration of strength, with comatose and lethargic condition," "the lethargy" of René Moreau, and the "stupor" of Bartholinus. He refers in this connection, "without prejudging the question of the "relationship between scarlatina and diphtherite," to the gigantic "work of Dr. Copland, for information upon the presence of albuminuria in malignant scarlet fever, a complication upon which he much insists, and to which he attributes many of its phenomena."

Among the modes of death enumerated, are suffocation by the extension of the membrane into the larynx, croup, œdema of the glottis, and "the dislodging of some of the masses of lymph, which might either close up the opening of the glottis or fall into the larynx." Besides croup, the most frequent of complications in all countries, we meet occasionally with convulsions, almost invariably fatal, and diarrhœa, which is attended with great danger.

Frequent micturition is also included among the most threatening symptoms, as well by Bard as by our English author. Purpura and hemorrhages are frequent forerunners of death; but Mr. Wade affirms that he has seen no case of purpura in which the kidney affection had not previously shown itself. He closes his interesting and carefully labored essay with a promise to "endeavor to elucidate, at some future period, the pathology and treatment of this complaint."

We turn now to Dr. V. J. Fourgeaud, well known to us as an able editor, in former days, of one of our most respected western journals, and a practitioner of extensive reading and marked ability. In his "Historical and Critical Essay" we note, at the outset, two points which must strike every reader with much force: the absence of every reference to that condition of the renal excretion which the English pathologist regards as of paramount importance; and secondly, the tendency to consider the disease as primarily local, and the symptoms consequently involving the constitution, and endangering the life of the patient, as secondary results, absolutely dependent upon the throat affection, and the effects merely of its extension and interference with the functions.

The history of the epidemic of 1856, hastily but graphically sketched, leads us at once to the doctrine thus taught, and the gratifying results of the practice deduced from it.

> "Among the districts suffering most, was that of Sonoma. A friend of mine had lost three of his daughters within a few days. Determined at once to hasten to the assistance of the afflicted family, I arrived too late, however, for one of the still surviving daughters, whom I found in articulo mortis, and beyond the resources of our science. I at once diagnosticated the disease to be well characterized pharyngeal diphtheritis, described by Bretonneau, and, encouraged by the wonderful success which had followed his treatment in similar epidemics, I did not hesitate to place my main reliance on local cauterization, and like him I selected muriatic acid as the agent. The result proved even more satisfactory than I could have reasonably anticipated. Of all the cases that have come under my observation from that time, *not one* has terminated fatally. Indeed, so successful has been this treatment in California, when resorted to early, that I now consider pharyngeal diphtheritis, such as it has been observed in this State, among the most manageable, and, when properly attended to, least fatal of diseases."

Lest the reader should doubt whether our two authorities are treating of the same malady, we will give a brief abstract of Dr. Fourgeaud's luminous account of the California epidemic. We have said that he recognized it at once as Bretonneau's diphtherite, ("from a Greek word, signifying membrane,") and proceeded to treat it accordingly. He reviews its history, tracing it as far back as the time of Aretæus. He admits its "great analogy with the putrid sore-throat that often accompanies malignant scarlatina," but declares that "it is not the same malady, and it is important to make the distinction. It differs essentially from it. Ulceration of the throat is very rarely observed in this disease." He states, however, that "when scarlatina and diphtherite appear at the same time in a locality, the patients affected with the first are predisposed to the latter."

He regards "membranous sore-throat as in some degree contagious. Girls are more frequently affected than boys," though this is not always remarked. "It may attack persons of all ages, but children of feeble constitution and of lymphatic temperament are most predisposed to it."

In recounting the symptoms, he dwells upon its commencement as a local affection. "The disease begins in a very insidious manner, by a little engorgement or inflammation of the soft palate, pharynx, and one of the tonsils. The attack seldom commences on both, but soon extends to both if not arrested." And again, "the disease begins with the inflammation of the mucous membrane of the soft palate, tonsils, and pharynx, terminating in the secretion of a false membrane, without ulceration or destruction of the skin," p. 8. "After the period of invasion, more or less fever is observed," etc. "There is no vomiting nor diarrhœa unless the mucous coat of the stomach and intestines becomes the seat of disease." "In favorable cases, recovery generally commences before the disease reaches the larynx, trachea, and bronchi; when the false membranes are produced on these parts the patients seldom recover."

According to Guersent and other pathologists who have made post-mortem examinations in this disease, the morbid appearances observed are not always confined to the pharynx, larynx, and trachea, but false membranes are sometimes discovered in the œsophagus, stomach, and intestines. Dr. Fourgeaud tells us, however, that "these gastro-intestinal complications are of rare occurrence," and begins his observations on the treatment with the rule that "this disease being, as we have seen, originally local, confined to the mucous membrane of the soft palate, tonsils, and pharynx, the treatment must be principally local." And again: "as I have observed before, the most important and effectual treatment is the local application of acids." "I have used successfully pure hydrochloric acid twice a day in the case of a child twelve years old, in which the tonsils, the soft palate, and a considerable portion of the pharynx were covered with the false membrane. It acted at once in arresting the further progress of the affection by circumscribing it, as it were, in the limits it occupied. From that moment the general symptoms gradually improved." Not that his treatment is always exclusively local. He tells us, on the contrary, that he has found benefit in an early emetic, and in the use of calomel and quinine.

A portion of Dr. Fourgeaud's interesting essay consists in a controversial examination of the views of some of his Californian brethren. Dr. Hardy, of Monte Christo, described a sore-throat epidemic in his locality. We have not before us Dr. Hardy's paper, and therefore will not comment upon Dr. Fourgeaud's conclusion, that the disease thus discussed "was not primitive or true diphtheritis, but one of the secondary forms of angina, such as usually accompanies scarlatina and other eruptive diseases."

In direct opposition to the views of Dr. Fourgeaud are those of Dr.

Blake, contained in an article published in the *Pacific Med. and Surg. Journal.* Dr. Blake maintains the constitutional character of pharyngeal diphtheritis, which, he says, "is as much a systemic disease as typhoid fever," and absolutely sui generis. Against this doctrine the authority of Valleix is produced, and that of Rilliet and Barthez, all of whom certainly speak of the malady as a local affection and dangerous by extension chiefly, if not exclusively, and by its mechanical interference with respiration. These latter admit the occasional assumption of a typhoid or adynamic aspect, but ascribe it, as do Bourgeois and others, to the poisonous effects of "putrefied secretions from the mucous membrane."

In "Ranking's Abstract," vol. xix. p. 192, there is a somewhat extended notice of Dr. Camp's essay "on the lately prevailing Diphtheritic Affection," the same, doubtless, described by Dr. Wade, recognized as identical with Bretonneau's, Fuller's, and Brown's, as extending itself over several of the counties of England, as well as the metropolis. It serves well to show the uncertainty of medical opinions, and the propriety of guarded expressions in speaking of disease as it appears under our own observation, that Dr. Camp considered the affection as "mainly, if not effectually, of an asthenic, adynamic type." We have seen Dr. Fourgeaud maintaining strenuously the opposite view, and supporting himself strongly by the great mass of French authorities; he quotes also from Professor Dunglison a brief, explicit statement, in separating gangrenous from diphtheritic pharyngitis, that the former is "eminently typhous, and the decided difference between gangrenous and diphtheritic pharyngitis, after all, consists in this circumstance."

Mr. Brown, of Haverford West, had no fewer than two hundred cases in 1849, of which he lost forty; in all of whom "the pharynx and larynx were simultaneously affected;" post-mortem examinations showing these parts with the tonsils, trachea, and bronchi coated with plastic, pseudomembranous exudation. His treatment was both constitutional and topical. He administered calomel with ipecacuanha, and affirms that he "did not lose a patient in whom he succeeded in establishing ptyalism." He found early emetics also very useful. He advocated the topical application of the solution of nitrate of silver.

The therapeutic of Dr. Camp was very similar. He employed "free applications of a strong solution of nitrate of silver to the parts affected, composed of from ℈i to ℥ij of the nitrate to one ounce of water, or similar applications of chlorine or hydrochloric acid; with the repeated administration of chlorate of potassa, or chlorine, or a combination of cinchona or its alkaloid salts with the mineral acids, and in the rarer cases calomel in repeated doses so as to produce ptyalism. An emetic may be occasionally given with advantage in the early stages; and when the disease has continued some time, the vital powers must be sustained with wine, stout, beef-tea, and other invigorating means."

In the *Am. Journ. Med. Sciences*, October, 1858, we have an interesting abstract of a paper by Isambert, on the Paris epidemic of 1855. He speaks of diphtheritic affections as spreading, endemic, epidemic and contagious. He regards them as of specific character, the general aspect or tendency being adynamic and typhoid. Relapses are not rare. Cutaneous counter-irritation is prohibited, because of the diphtheritic manifestations ready to show themselves, and become new centres. The general management is by emetics, mercurials, alkaline carbonates, and chlorates. Local applications of calomel, alum, hydrochloric acid, and especially nitrate of silver are recommended. The patient should be well nourished and sustained by bark, coffee, and wine.

A brief but concise history of the same epidemic, a diphtheritic angina, as it was called, which prevailed in Lima, is given us from the pen of Odriozola, a Spanish physician of that city. It showed itself first in 1855, and reappeared in 1858.

We meet with it, thus, in all climates, in almost all seasons, and under very varied contingencies. But in Lima it presented some singular features. It attacked few of the lower classes, the poor, the most exposed, assailing "in preference those who enjoyed all possible comforts." The black race, we are informed by the same writer, "has been as resistant to this angina as to the yellow fever." Children were its principal subjects, though not exclusively, for there were two adult deaths from it. "Cauterizations with pure hydrochloric acid, practiced two or three times a day, and emetics of tartarized antimony or ipecacuanha were alternately employed. The deaths were about one in five or six."

A pithy paragraph from the *Med. Times and Gaz.*, October, 1858, conveys a most unfavorable view of the prognosis and influence of treatment in this formidable malady in Paris:—

> "In thirty cases of diphtheritis observed at the Hospital St. Eugenie, medicine does not seem to have been of any service. Large doses of ipecacuanha were given in vain; so also calomel and alum; chlorate of potassa was found useless. In four patients, the internal surface of the larynx was cauterized several times with nitrate of silver, by aid of M. Loiseau's instrument, but the operations were not followed by the effects noted by its inventor. In the great majority of the cases tracheotomy was had recourse to."

Having thus laid before our readers a general outline of the state of medical opinion and practice in reference to this subject, we proceed to offer the result of our studies in a brief and condensed form:—

1. It seems to us, then, that in the present condition of our knowledge,

it is safer to speak of diphtheritis as a diathesis, tendency, or symptomatic manifestation of a morbid character, than as a specific or separate disease. In the fauces, we have diphtheritic pharyngitis; in the larynx, membranous croup; in the intestines, tubular diarrhœa. A diphtheritic conjunctivitis has been described; membranous pseudo-plastic exudations occur in scarlatina and angina maligna; they may appear, says Valleix, "in rubeola, sometimes; more seldom in variola, and still more rarely in typhoid fever." West tells us that he "once found the œsophagus lined by a complete tube of false membrane to within an inch of the cardiac orifice of the stomach." We saw a large mass extruded from the bowels in a case of yellow fever. The nipples of a nursing mother have become diphtherous from contact with the mouth of a diseased child. Blisters are covered with this exudation in diphtherous patients. Nay, Dr. Fourgeaud quotes a case in which "a child at the College of La Fleche, while suffering from chilblains during an epidemic of diphtheritis, had his toes affected with diphtheritic concretions."

2. This pseudo-membrane, consisting as it does of a plastic exudation, albuminous, fibrillary, mingled with inflammation corpuscles, pus globules, and, as Seitz tells us, "a species of cell, double the size of the pus globule, but otherwise similar to it," is of various degrees of organization or organizability. It exhibits various degrees of adhesion to the surface from which it is thrown out, being sometimes tenaciously connected with it, and sometimes very loose. This connection is probably vascular, and denotes its degree of vitality, or rather, so to speak, its potentiality of assuming a dependent life.

3. It is liable to become the seat of varied parasitic development, algous or fungous.

4. It is occasionally associated with contagious diseases.

5. Hence, either by such complication, or by actual contact, or transmission, it seems to be conveyed from one person to another.

6. It is usually, however, endemic or epidemic; depending on some of those obscure conditions surrounding us locally, with which we are familiar, without at all comprehending them.

7. It is often surprisingly amenable to local treatment.

8. It is as often singularly indomitable, refusing to be controlled by any method of management whatever.

9. The mercurials seem to have been most generally found serviceable of all constitutional remedies.

10. Of local remedies, the hydrochloric acid stands first in general estimation; next the nitrate of silver; then the sulphate of copper; alum and the perchloride of iron are also recommended.

11. Emetics are extensively used; partly for their local, partly for their constitutional influences.

12. The albuminuria observed by Mr. Wade is probably a part of the general tendency to albuminous exudation or exosmose. Its presence should be inquired for by all observers.

13. The phenomena of pseudo-plastic formation may be connected either with sthenic inflammation, or asthenic, adynamic constitutional conditions.

ART. III.—*The Ganglionic Nervous System; its Structure, Functions and Diseases.* By JAMES GEORGE DAVEY, M.D., M.R.C.S., London Physician (now) to the Stapleton General Dispensary, near Bristol, formerly Medical Superintendent (F.D.) of the County Asylums for the Insane at Hanwell and Colneyhatch, Middlesex. London: John Churchill, 1858. 1 vol. 8vo., pp. 309.

THE broad title with which Dr. Davey prefaces his work, must not be regarded as an accurate index of its contents. The book is not a systematic treatise on the ganglionic nervous system, but an exposition of certain views concerning its office and functions. The author himself, after rehearsing his subject in a long introduction of thirty-six pages, seems to have become conscious of some discrepancy between the caption of his proposition, as set forth in the title-page, and its demonstration, and tells us, in an apologetic way, at the commencement of the chapter on the structure of the sympathetic, "that his book is essentially physiological; but that he has thought it necessary to the entirety of the subject and the easier comprehension of the views therein unfolded, to prefix some general remarks on the anatomy of the sympathetic nerve." This statement reveals the secondary character of the anatomical portion of the work, and drives us elsewhere in search of the author's object in publication. By gleaning, here and there, a little from many obscure pages, we find, underlying the whole volume, the hypothesis that the ganglionic nervous system is the seat and origin of all vital phenomena. The mode by which Dr. Davey arrives at this startling conclusion is thus: he first assumes the main point at issue, and asserts that vitality is not an inherent property of organized tissues, but is always associated with and dependent upon nerve structure; this taken for granted, he proves that vital phenomena may exist and be manifest when the cerebro-spinal nervous system is absent, and concludes, therefore, that they must originate in the remaining nerve structure, that of the sympathetic. It is scarcely necessary to say more than this, to show the illogical character of the book. However, let us examine more in detail, the author's treatment of his subject.

He portions his work into four chapters, one to each of the following headings: The Structure, Functions, and Pathology of the Ganglionic Nervous System, and general observations on the Treatment of Disease. The object of the anatomical chapter is to show the magnitude and universal distribution of the sympathetic system, and that the brain and spinal cord are subordinate to it. These points are necessary to illustrate the capability of the ganglionic system to be the seat of life, and the little probability that such an important function would reside in a subordinate organ. The author says:—

> "When, in the course of these pages, I shall have to treat of the many and important functions of the ganglionic nervous system, it may strike the mind of the reader that its mere bulk is hardly compatible with the offices claimed for it in the animal economy; however, this objection as regards the mere quantity of nerve tissue is rather apparent than real." "So universally and copiously is the ganglionic nervous tissue distributed, that, like the parenchymatous tissue, it is interwoven with every portion of the organism; and more even than this, constitutes a great part of the volume and weight of the whole body."

To establish the presence of ganglionic nerve matter in cellular animals, etc., where it escapes detection by the closest scrutiny, we have the ingenious supposition of a "highly elaborated (imperceptible?) nervous organism." The author offers no proof of such a condition, but thus announces his belief:—

> "I cannot myself doubt that nervous matter *is* present in a 'diffused form,' *i.e.* incorporated with the other tissues, in all those animals wherein no *distinct* nerve structures have been made out. I cannot dissociate the positive *vitality* of such animals from a highly elaborated (imperceptible?) nervous organism."

Touching the last point, the supremacy of the ganglionic system, the author rests his faith, mainly, on his belief of its precedence of development both in the animal series and in those individuals possessed of two nervous systems—sympathetic and cerebro-spinal. He writes—

> "It is concluded, then, the ganglionic nervous system first exists in a *molecular* form; and that it is made up of *globules* dispersed throughout the *homogeneous* texture of the animal, as in the acriti, the lower entozon, etc.; as such, it has always been presumed to exist in the early human embryo."
>
> "These nervous globules, arranging themselves in a longitudinal series, form filaments, and these "filaments" at length form a central point, a ganglion (*solar ganglion*, Anderson.)
>
> "Ascending the scale of animal creation, and arriving at the mollusca, nervous matter is found secreted about and around the œsophagus, and on the dorsal aspect of the animal (supra-œsophageal ganglion;) this nervous matter

> becomes, in the higher animals and in man, the tubercula quadrigemina or medullary oblongata.
>
> "Still ascending, the cyclo-ganglionic nervous system becomes more complicated, while the several tissues and structures subordinate to the same, including the cerebro-spinal system, are proportionately amplified; the increased development of the former, and the general augmentation and addition of parts in the latter, being in the relation to each other as *cause* and *effect*."

Such, then, is the anatomical chapter; how far it illustrates the structure of the sympathetic each can judge. In the physiological section, which is the one that professedly characterizes the work, an attempt is made to demonstrate that such phenomena as irritability, formative power, animal heat, instinct, etc., are functions of the sympathetic.

Early in the introduction we have brought to our notice the author's peculiar opinion concerning the source of irritability. He presents it as an extension of, or corollary to the views of Bichat, published toward the close of the last century, in his work entitled "Physiological Researches upon Life and Death." After quoting this distinguished physiologist's division of life into animal and organic, and his reasons for such division, he thus continues:—

> "Now, although Bichat claimed for the organic life, that life common to both vegetables and animals, or rather for those parts or organs exercising the functions of the organic life, a 'mobility, or sensibility,' *i.e.* an irritability, and although he declared that upon the 'organic sensibility,' etc. depends the phenomena of digestion, circulation, secretion, exhalation, absorption, and nutrition, and that, moreover, this organic sensibility is common both to the plant and to the animal, and that 'the zoophyte enjoys it as perfectly as the most perfectly organized quadruped,' yet does it nowhere appear that he associated such organic life, or its specific qualities, as mobility, sensibility, or irritability, etc. with the ganglionic nerve structure."

Herein, then, is the peculiarity of the author's view; while, with Bichat, he regards irritability as a property common to both vegetable and animal tissues, upon which depends the strictly vital or organic functions, nutrition, secretion, etc., he does not receive it as an endowment of organic texture, but as a function of the ganglionic nervous system.

This view necessarily involves the admission that plants and cellular animals possess a nervous system analogous to the sympathetic. This fact, however, seems no difficulty to Dr. Davey. He says:—

> "Our finite senses may never detect, even with the aid of art and science, what we shall be able to demonstrate as the analogue in vegetable substances of the ganglionic nervous system in man and the higher animals; but that such exists, though, perhaps, in a diffused and rudimental state, is, to my mind, a matter of demonstration—logical demonstration."

On this point we will only say the nerve cell and nerve fibril, the components of a nervous system, have specific characteristics by which we know them, and without which they cease to be such. A diffused nerve, therefore, is no nerve at all, and cannot be assumed as exercising the ordinary functions of a nerve. Moreover, the impossibility of detecting, with the highest microscopic powers, a structure which is usually seen with those of medium strength, is a warrantable evidence of its absence. We see reason, therefore, why we may reverse the author's "logical demonstration" and conclude that, because irritability is possessed by plants and cellular animals, in whom no nervous system can be discovered, that it is not solely a function of nerve structure. But let us leave this collateral question of the universal distribution of nerve tissue among organized beings, and consider upon what grounds the author regards irritability as a function of the sympathetic. We find his conclusions are chiefly drawn from the experiments of others, and mainly from those made by Le Gallois and Marshall Hall, to prove that the cerebrum and spinal marrow are independent organs; and those of Sir B. Brodie, instituted to show that muscular irritability is not derived from the spinal nerves. In order to appreciate the inferences of Dr. Davey, it is necessary to give an abbreviated history of these experiments. Le Gallois destroyed the spinal marrow in rabbits by thrusting a stylet through the whole vertebral canal; all life (reflex) ceased in the trunk; irritability alone remained. Dr. M. Hall experimented upon a decapitated frog, from which the viscera also had been removed. He says:—

"Now I beg here to repeat, the cerebrum, the centre of the spinal cord of nerves, and all the ganglionic, have been removed from this animal, and yet, when I pinch the extremity, it moves so as to be obviously perceptible at the remotest part of this theatre." "This influence passes not only from one extremity to the other, but it also passes from one set of extremities to the other set of extremities; thus it is quite plain that there is a nucleus of nervous matter between the two anterior extremities, and another nucleus between the two posterior extremities, by which these nervous links are united and associated in their motions one with another."

Upon these experiments Dr. Davey thus comments:—

"The irritability which Le Gallois tells us remained after the extinction of life in the rabbit, the spinal cord of which he destroyed, was doubtless due to the integrity of the ganglionic nervous system. This had been left intact, and was therefore in a position more or less, and in spite of the shock sustained by the system generally, to continue its specific functions; and hence the irritability of which the experimenter has spoken."

And again:—

"If the experiment on the frog, as above detailed by Dr. M. Hall, was of the value claimed for it, there would have occurred, on the extremities being pinched, not the mere movement 'so obviously perceptible to M. Hall,' but nothing more or less than the excito-motor phenomena in their stead; however, there were present only 'the motions without force,' that peculiar irritability which belongs to the organic nerve structure. The irritability observed by Le Gallois, in his experiment with the rabbit, and that manifested by the frog in the hands of Dr. M. Hall, was precisely of the same kind, although plainly much modified by the circumstances of the vivisection in either case."

This interpretation of the phenomena exhibited in these experiments seems so unwarranted by their history, as given above, that one is at a loss to surmise upon what grounds the author asserts their identity. Le Gallois clearly shows that reflex phenomena had ceased, the trunk lay motionless, but irritability, that motion without force, the product of direct stimulation applied to a part, remained; while Dr. Hall, implying that irritability was present, distinctly conveys that true excito-motor phenomena were also manifest. Stimulation of the surface produced movement of the limb, extending even to that of the opposite extremity. Does Dr. Davey imply a want of correctness in the statement of Dr. Hall as to the extent of movement? Surely the "frog experiment" has been too often repeated, with similar results, to justify such a conclusion; or, does he mean to suggest that reflex movement and irritability are the same? This, indeed, would seem to be his purpose, from the remarks which he makes on the following experiments of Sir B. Brodie :—

"First Experiment.—All tissues connecting the anterior extremity of a dog with its body were divided, except the axillary artery and veins, and twenty hours afterwards the muscles were found to contract strongly under the stimulus of the voltaic battery.

"Second Experiment.—The whole of the posterior part of the spinal marrow of a frog was removed, and five months afterwards the muscles of the hind-legs were found capable of powerful contractions."

The author says :—

"A comparison of these two experiments will show that the fore-leg of the dog and the hind-legs of the frog were, in all respects, alike; that is to say, their acquired anatomical conditions were on a par, and hence was it that, in both instances, that the 'contractile power,' the 'peculiar kind of sensibility,' *i.e.* irritability, or if Dr. M. Hall would prefer to have it so, the something which remained, was, on the application of a stimulus, so distinctly manifested in either case."

The "something which remained" here alluded to, is the reflex power which continued after the removal of the cerebrum and sympathetic ganglia, in the experiment of Dr. Hall, above cited. Now the essential apparatus of excito-motor phenomena is the "Diastaltic Nervous Arc," (Hall;) the impression must be conveyed from the surface to the spinal centre, and thence reflected to the muscles; in this consists the peculiarity of reflex action; but Dr. Davey cannot so regard it when he identifies the "something that remained," the function of the spinal centre, with muscular irritability, that contracts under stimulus, be it direct or reflected. The experiments above quoted, are those upon which the author relies to demonstrate the association of irritability with the sympathetic nervous system. Ignoring the possibility of its being an inherent property of tissue, he seems to have adopted a negative train of reasoning, considering it only necessary for his argument that he should prove that irritability is not a function of the cerebro-spinal nervous system. To this end even his illustrations do not seem most happily selected; for while two of them are conclusive against the spinal cord, the other two are almost as convincing against the supremacy of the sympathetic. To avoid the difficulty they suggest, Dr. Davey denies the assertion made by Dr. Hall, that the removal of the whole of the viscera of the frog is equivalent to the removal of the entire ganglionic system; and, on the other hand, affirms that this system is "intimately and indissolubly connected and incorporated with each fraction of one and all of the animal tissues," and, moreover, that it must never be forgotten that each ganglion belonging to the organic nervous system is held to be independent of every other; and, what is more, that each nerve proceeding from a single ganglion is, in a great measure, independent of that ganglion, and even that each point of such a nerve is independent of all the rest, and constitutes, *per se*, a distinct focus of nervous influence, an assumption sufficiently sweeping to enable the author to establish all he desires; but at the same time, in the absence of proof of such "fractional" relationship between the ganglionic nervous system and all tissues, a mere begging of the question. It is but little different, to declare irritability a direct property of tissue, or the property of an undemonstrable something "intimately and indissolubly connected and incorporated with it." While, therefore, we can, with Dr. Davey, "directly perceive that the experiments of Le Gallois, Hall, and Brodie, are just so many practical demonstrations of the persistence of a peculiar "irritability in the mutilated animal," we cannot see that they furnish any reasonable proof that it is "a specific function, or power, or quality exercised or possessed by the ganglia of the great sympathetic nerve."

Next in order, the author reviews the animal and organic functions, and takes up the consideration of the "formative power" as an effect or function of the ganglionic nervous system. After disposing of the opinions of Hunter, Abernethy, and Lawrence on the vital principle, and refuting the French doctrine that life is the result of organization, he thus proceeds:—

"Now both the organization and its functions may be said to be demonstrable to the senses, but the same cannot be said of the power to which organization is the instrument, though neither its presence nor its seat can be well doubted. Granting for the sake of argument, that the ganglionic nervous system is the source or origin of this power, or organizing principle, or creative force, it remains to show, the ultimate cause of this important part of the organism,—from whence did it receive its being?"

The ordinarily accepted doctrine that "life proceeds only from life, and that there exists no other but that which has been transmitted from one living body to another by an uninterrupted succession," is not received by the author, and although suggesting none other, he considers this view "clearly negatived" by the experiments of Messrs. Crosse and Weekes, on the production of acari in close atmospheres, under the influence of continued galvanic currents. Leaving this question of the origin of life with the acknowledgment that "it is not in the power of man to offer anything more than a very general reply," he returns to the consideration of the ganglionic nervous system as the habitation or organ of life. In support of this view he relies principally upon two points: its early formation in the embryo, and its integrity of development in certain monstrosities and idiots, in whom the organic functions had been very properly carried on, although the brain and spinal cord were deficient or entirely wanting. Admitting the anatomical correctness of these assertions, to wit, that the first solids of the embryo are portions of the ganglionic nervous system, and that the fully developed nerves in amyencephalous and brainless monsters belong exclusively to the sympathetic system, both of which have been denied, the conclusions of the author do not by any means follow; and while these interesting instances of arrested development undoubtedly prove that the "formation power," as manifested in the growth and maturity of the individual, may exist independent of the cerebro-spinal nervous system, the inference is not logical that, therefore, it must be an attribute or function of the sympathetic. On the other hand, the fact of those nerve-centres which ordinarily manifest such an influence upon its phenomena being proved not essential to its existence, would rather lead us to remove it altogether from the domain of nerve structure, and to this end the more recent researches of physiologists seem to tend, the disposition being to regard the vital properties of tissues as inherent in themselves, attributing to the nervous systems, cerebro-spinal and sympathetic, the control of the circulatory apparatus, by means of which the blood is distributed to each part of the economy according to its need, and thus indirectly the capability to increase or diminish the activity of the organic functions. Animal heat the author thinks essentially a vital process, and not a chemical one. The numerous theories advanced concerning its source, he deems unsatisfactory, but believes "the unprejudiced observer will feel satisfied with the views about to be submitted to him." He thus briefly states the opinions he does not entertain, and gives the view he regards with so much confidence:—

> "If, then, the animal heat be not the product of any chemical change taking place, either in the lungs or in the secerning vessels—if it be not the result of the different capacities for caloric of the several fluid secretions of the body and their source, viz., the blood—if it do not depend on the moistening of the organic structures by their several fluids, nor on the influence of the cerebro-spinal system—from what source, I would ask, can the animal heat be derived, but from the ganglionic nervous system?"

Without being forced to the conclusion by the cogency of Dr. Davey's reasoning, it does not seem improbable, as suggested by Dr. Carpenter, that the nervous system may, at times, act directly in producing animal heat, as it may do indirectly by accelerating the various chemical changes taking place in the body. In the electric eel and torpedo we see vital force manifesting itself in the form of electricity, and in their nerve-structure we find an arrangement for effecting rapid and extensive molecular changes: it is impossible not to associate these two facts in the relationship of function and organ. In the same way it is not improbable that heat may be generated by changes taking place in the nervous substance, and by the nerve-fibres distributed to all parts of the body. Be this as it may, however, there are facts which, on the other hand, clearly prove the nervous system is not the only source of organic heat; among these may be mentioned the increase of temperature after death, as observed by Dr. Dowler, and the development of heat in plants, during periods of active vitality. The last of the functions which Dr. Davey ascribes to the omnipotent sympathetic ganglia, is instinct. He looks upon it as nothing less than an animal function, varying with the construction of the nervous system exercising it, not an abstract quality, but one altogether dependent upon organization. One of the strongest facts upon which he bases his supposition that instinct is associated with the organic nervous system, is the occurrence of instinctive movements in monstrosities born without brain or spinal cord, and in some of the lower forms of animals in which only the ganglionic system is developed. The same idea apparently influences the author's conclusion here, as in consideration of the other functions, although it may be with more justice. He seems to have regarded all the phenomena of life as necessarily connected with nerve-structure, and finding the cerebro-spinal system absent, without a corresponding cessation of these phenomena, he concludes they must be functions of the sympathetic. The amyencephalous and brainless monsters of Drs. Hall and Lawrence have assisted largely, no doubt, in bringing the present volume to its publication. Thus ends the physiological chapter of the treatise, and we are enabled to understand why the author labored so strenuously in his preparatory anatomical remarks to establish priority of origin and influence to the sympathetic nervous system.

As an appendix to chapter ii., the author publishes a paper read by him before the British Medical Association, in 1854, entitled "On the Excito-motory or Diastaltic Nervous System of Dr. M. Hall." His views are sufficiently given in the following conclusions, which we find at the close of the article :—

> "1. That the more complicated anatomy of the spinal cord suggested by Dr. M. Hall and sought for by Mr. Grainger, has not yet been realized.
>
> "2. That the mere sensory and motor nerves or roots are themselves sufficient to the integrity of all those phenomena called excito-motory, which emanate from the spinal cord, or, in other words, that there is no necessity for any distinct division of the nervous (spinal) system, for the production of excito-motory phenomena.
>
> "3. That the exercise of the functions of the spinal cord is due to the peculiar influence of the ganglionic nervous system exerted on its organism.
>
> "4. That both the external and internal excito-motory phenomena are alike dependent on the vital stimulus imparted by the great sympathetic nerve; and in the former instance, through the instrumentality or medium of the medulla spinalis.
>
> "5. That such is the relationship between the great nervous centres, viz., the brain, spinal cord, and the solar ganglion, that the second (viz., the spinal cord,) being at one time under the dominion of the first, *i.e.* the brain, and at another time under that of the third, *i.e.* the solar ganglia, and being thus intermediate, will now manifest a cerebral or voluntary power, (and this the result of consciousness, and, of course, volition,) and then (the antecedent circumstances being dissimilar) display one of an involuntary, automatic or instinctive, or excito-motory character; but this only of course when the organic nervous apparatus is in the ascendant and the brain comparatively quiescent; or, in other words, when sensation (spinal) and motion, and not consciousness and volition, (cerebral attributes,) are in operation, if I may be allowed so to express myself.
>
> "6. That the great sympathetic nerve is endowed with a specific and independent power, to which both the brain and spinal cord, and with them, of course, their functions, are subordinate."

The chapter on Pathology is, of course, based upon the preceding views, and as the sympathetic was then regarded as the source of all vital operations, so it is now considered to be concerned directly or indirectly with every variety of abnormal action to which the organs of the body are subject. The author thinks pathologists have grossly overlooked the cause of disease in their zealous study of its effects; and although he would not ignore the investigation of morbid anatomy, he claims a more searching inquiry "into those changes in a portion of our organism (the ganglionic nerve-structure) which must have preceded and accompanied those more palpable and demonstrable to our senses." In the nosological arrangement of writers we are afforded merely a series of details of disease, while "we look in vain for any information concerning even the morbid state of the blood; and as for the organic nervous system—the moving power of the whole, the main-spring of the entire organism under circumstances of both health and disease—there is hardly any notice taken of it." In his aversion to these practices of others, Dr. Davey falls into the opposite extreme, and builds up his pathology without any reference to structural changes taking place in the sympathetic. He says:—

> "It will not be doubted that if, as has been shown, the nutrition, secretion, exhalation, absorption, etc., as manifested throughout the whole organism and its parts, and as realized through the agency of the capillaries, are nothing more or less than the functions of the ganglionic system of nerves, it must follow that all deviations from the healthy state of the same functions can be accounted for in no other way than by referring them to certain changes in the *vital affinities* of the solids and fluids of the body, and which must be regarded as resulting from a depraved action of a part or the whole of the organic nervous system."

Among the many disorders attributed by the author to a diseased condition of the sympathetic, he thinks fevers afford the most satisfactory evidence, as in them all the vital functions are more or less interrupted or depraved. He looks upon the cold stage as closely allied to the collapse of cholera, and cites instances in his experience among the intermittents of Bengal and China, that were hardly less alarming. These examples of suspended vital activity manifest symptoms very like those produced by more unequivocal injuries to the sympathetic, as blows over the epigastrium, extensive bodily injuries, extreme fear, etc., and therefore should be referred to the same source. In proof that the syncope of collapse arising from these various causes is effected through the medium of the sympathetic, he cites the experiments of Marshall Hall, made for this purpose, when the influence of the brain and spinal cord was shut off by drugging with alcohol and laudanum, or by their removal from the body; and yet the crushing of a limb, or a blow upon the stomach, caused the circulation to cease instantly. Dr. Hall refers these effects to the ganglionic system. But besides fever and cholera, we have other diseases, a long and incongruous list, "apoplexia levis," hypochondriasis, atrophy of limited groups of muscles, chorea, angina pectoris, diabetes, dysentery, lepra, etc. etc. etc. through all of which the same idea of the author is apparent, that the first morbid impression is made upon the sympathetic, "inflammatory disorganizations" occurring afterwards "as the results of a subsequent abnormal action," the mere effects of the impression upon the sympathetic. We see no reason why Dr. Davey might not apply his hypothesis to all diseases as appropriately as to those he has enumerated; had he thus generalized, he would have condensed his chapter on Pathology to a paragraph, and in no way impaired its efficiency.

In the treatment of diseases affecting the ganglionic nervous system, the author advocates the use of free purgation, and of tonics and stimulants; the former to restore the suspended functions of the organic apparatus, the latter to support the vis vitæ. In cholera, this plan of practice first came to his notice under the direction of Mr. Twining, at the General Hospital, Calcutta, and since then he has not ceased to recognize it as the essential basis of all treatment. He says:—

> "Purgative medicines when given in cholera, so-called, *i.e.* when judiciously given, never act as purgatives, but they restrain the diarrhœa and effectually check the intestinal discharges; they act as restoratives to the normal character of the secretions, and so facilitate the formation of healthy fæcal matter."

In the selection of purgatives, Dr. Davey favors none as a specific, although the combination he used is composed of calomel, one grain and a half; compound extract of colocynth, five grains; oil of caraway, two minims. The pills were given every hour or two, according to the urgency of the symptoms, until the evacuations become yellowish or bilious in color, which happens generally after four or five doses. However, he cautions us against being too mindful of the drug and losing sight of the broad principle of purgation. In fever and the neuroses, the author advocates the free use of purgatives, thinking by this means to avoid many of these phenomena of exhaustion which result from the persistence of disease. Although willing to admit that Hamilton and Abernethy carried the purgative treatment of diseases, and of the neuroses especially, a little too far, he thinks the tendency of the day is to err upon the other extreme, to rely upon nature to the neglect of art; "that the present 'type of disease' does not require, nay, more, will not bear the same lowering treatment, viz., the bleeding, the purging, the puking, the starving which used to be pursued in certain cases, is most true; but to assert that the lancet is to be altogether proscribed and purgation fall into utter disuse, is to commit a capital offence against common sense and common experience." To support the vis vitæ, the author relies principally upon quinine in fever and cholera, and brandy and ammonia in the latter if the urgency of the case demands them. Twenty years ago, the author thinks the administration of quinine (bark) in fever was a more delicate question than now; that is, it was not so easy a matter to hit the precise time when this medicine would do good, and not aggravate the symptoms of the disease.

The "type of disease" has changed, so that now idiopathic febrile affections not only will bear the early administration of this drug, but the safety of patients actually demands it. The only antecedent measures necessary, are to rid the stomach and bowels of all offensive matters, and restore the tone of the excretory organs by more or less active purgation. In the subsequent parts of this chapter, the author adds much that is suggestive of the proper specific treatment of hypochondriasis, apoplexia levis, cardialgia, etc.; in fact, these few pages upon the treatment of disease contain most that is valuable in the work; they are practical and evidently the deductions of experience, and as such, are entirely independent of the hypothetical physiology to which they are attached. In conclusion, however, we may state that we have found the work, as a whole, very unsatisfactory; it fails entirely, we believe, to justify the author's views, and the fragments of truth incidentally scattered through its pages are wholly inadequate to compensate for the time and labor necessary for their discernment.

ART. IV.—*Brief Expositions of Practical Medicine, to which is prefixed The Paradise of Doctors—a Fable.* By JACOB BIGELOW, M.D., late President of the Massachusetts Medical Society, Physician to the Massachusetts General Hospital, etc. Boston, 1858. pp. 69. 18mo.

IF brevity were the soul of philosophy, as it is represented to be of wit, there would be cause for gratulation at the sight of Dr. Bigelow's "Brief Expositions." But as both philosophy and wit consist of other ingredients besides brevity, we are required to look into the tiny volume before us, and ascertain whether these ingredients are present. Sometimes we hear of the whole of a disputed question being contained in a nut-shell; but what if we find the kernel to be withered or unsound? To what extent our search in the present case will be rewarded, or a pleasant flavored and nutritious kernel met with, will appear in the sequel. We turn with some curiosity to what is called "A Fable," and find it to be, not a symbolical representation, but a fictitious narrative of men's doings; not a fable so much as a parable; not characters drawn from the brute creation, the materials of which the fabulist makes use, but human actions set forth in a style of exaggeration. A real fable must have unity, and not be wanting in dignity, nor should it be without traces of gayety or satire.

Dr. Bigelow's fable, called "The Paradise of Doctors," is no fable, and therefore we need not look for the qualities of one in his production. We meet with exaggeration, but it wants generally even the humor of caricature. The paragraph beginning with "Clergymen and moralists forgot that men were sinful; it was quite enough that they were bilious," is a pleasant exception. If extremes in medical dogmas are deemed fit subjects for satire, it would be better to draw them from the history of medicine than from the annals of quackery, and certainly not to mix names illustrious in the former with the unprincipled adventurers in the latter. Why should "the heroic shades of Rush and Bouillaud" be supposed to be evolved by spirit-rappers in the same breath with those, we will not say of "Sangrado," but of Morrison and Brandreth? "The physic-taking part" of seamen's duty is not that of which, as a class, they can complain much. The requirements of their officers are too urgent and exacting to allow of the surgeon on board putting or keeping unnecessarily the men on the sick-list, without strong necessity. We have known two crews to pass each nearly six months at sea without their suffering at all from the contents of the medicine-chest or from the doctor, and a young one, too, who was with them all the time. "The spark which had struck the magazine caused the whole population to explode," is a very figurative sentence. The idea of a population, instead of a magazine exploding, is really a novel one; it goes beyond anything in this line to be found in Rabelais, and sinks the retail trade of the "young spoetizator" of that writer into insignificance.

The sudden and general awakening of "the physicians, druggists, and citizens of the quiet old State of Massachusetts," in regard to "the important duty of taking physic;" the universal doctoring and dosing, and manufacturing, and swallowing of drugs which followed, and the reawakening to the consequences of this course, constitute the staple of the story of the "Paradise of Doctors," which, owing to the alarming influx of these gentlemen from the interior, and especially from New Hampshire, "became an excellent place for doctors to starve in." Among the interlocutors in the piece are three persons—an old lady, a bluff marketer, and a manufacturer, who give their experience, respectively, of homœopathy. An old gentleman gets up and delivers himself of his views on *rational medicine*, and the folly of extremes. He states:—

> "That in the form of calomel, the City of New Orleans has swallowed up some hundreds of tons of the quicksilver of Spain and South America. Palaces were being built in various cities, alike from poisonous arsenic and harmless sarsaparilla. A century hence, the mines of gold will be sought for, not in California, but in the cemeteries of old cities, where it has been geologically deposited under the industry of dentists."

They who confound the fabulous with the fictitious may, on reading passages like this, think that, after all, our author has really written "a fable." The oracular old gentleman gravely expresses his belief—

> "That medicine would have fulfilled its true mission when doctors should have enlightened the public on the important fact that there are certain things which medicine can do, and certain other things which it cannot do; instead of assuming for it the power to do impossibilities. Among the good effects which must ensue from the diffusion of light, would be the disappearance of quackery from the world; for quackery consists wholly in medication."

To this we would reply, most grave pundit, that, although such a line ought to be drawn for the sake of science, yet its most obvious effect would be to give up the division of incurable diseases to the deceptions and rapacity of quacks, whose strongest assertions of their superior skill are coupled with their alleged ability to cure these diseases. One little matter has escaped thee, O pundit! and that is, the inextinguishable desire of people of all ages and colors and creeds to prolong their lives, and to get rid of their diseases, and, as a corollary, to hope on, hope ever, in the belief that there are medicaments known to certain persons which will cure, ay, even that which others tell them is incurable. So soon as the regular physician assures his patient that his case is beyond the reach of medicine, said patient understands by this that his own doctor cannot cure him, and straightway the exit of the regular is a signal for the entrance of the irregular follower of Esculapius. The question here is not so much a better logic among medical men, although that is very desirable and much needed, but more enlightenment among the multitude, respecting the human frame, the functions of its several parts, and the means by which it is impressed and sustained by hygienic agents. Until a knowledge of this kind becomes general, we must deprecate any appeal to those outside of the profession; whether it be in the fictitious form described in the "Paradise of Doctors," or in the more customary fashion of quack advertisements.

When Dr. Bigelow's "Fable" and "Expositions" come before him for revision, we would suggest that he introduce, after his mentioning the quantity of quicksilver used by the people of New Orleans in the form of calomel, the case of the gigantic and renowned Pantagruel, the hero of Rabelais. It would be in keeping with the satire on over-drugging, although it may furnish, at the same time, a hint to some ingenious pill-vender to try still further public credulity. The treatment is narrated as follows:—

> "Now, to tell you after what manner he was cured of his principal disease, I let pass; how, for a minorative, he took four hundred pound weight of colophonic scammony; sixscore and eighteen cart-loads of cassia; eleven thousand and nine hundred pounds weight of rhubarb; besides other confused jumblings of sundry drugs. You must understand that, by the advice of the physician, it was ordered that what did offend his stomach should be taken away; and, therefore, they made seventeen great balls of copper, each whereof was bigger than that

which is to be seen at the top of St. Peter's needle, at Rome; and in such sort that they did open in the midst and shut with a spring. Into one of them entered one of his men, carrying a lantern and a torch lighted, and so Pantagruel swallowed him down like a little pill; into seven others went seven country fellows, having every one of them a shovel on his neck; into nine others entered nine wood-carriers, having each of them a basket hung to his neck; and so were they swallowed down like pills. When they were in his stomach, every one undid his spring and came out of their cabins, the first whereof was he that carried the lantern; and so they fell more than half a league into a most horrible gulf, more stinking and infectious than ever was Mephitis, or the marshes of Camerina, or the abominably and unsavory Lake of Serbina, whereof Strabo maketh mention. And had it not been that they had very well antidoted their stomach, heart, and wine-pot, which is called the noddle, they had been altogether suffocated and choked with these detestable vapors. * * * * * * * * * Finally they found a montjoy, or heap of ordure and filth: then fell the pioneers to work to dig it up, and the rest with their shovels filled the baskets, and when all was cleared away, every one retired himself into the ball. This done, Pantagruel, enforcing himself to a vomit, very easily brought them out ——; but when they came merrily out of their pills, I thought upon the Grecians coming out of the Trojan horse. By this means was he healed and brought into his former state and convalescence. And of those brazen pills you have one at Orleans, upon the temple of the body cross church."

The reader cannot fail to admire the conscientiousness of Rabelais, who, fearful that his narrative might be doubted, clinches it with an appeal to a visible and tangible evidence.

It is not necessary for us to follow Dr. Bigelow in his "Brief Expositions of Rational Medicine." Putting aside commonplaces and exaggerations, little remains in the shape of a demonstration of the real obstructions in the way of scientific progress in medicine, or of the principles to serve as a foundation for reform. The author talks of the evils of ultra-medication, polypharmacy, and conflicting modes of treatment. No person will contest with him on these points: they are universally admitted by medical men, who will also agree with the author, that a sick man ought to be saved from the officious good-will of his friends; and that officious medication ought to be prevented. But the author will not be echoed in his sweeping and indiscriminate denunciations of certain modes of practice,—as, for instance: "When carried to its 'heroic' extent, artificial medicine undermined the strength, elicited new morbid manifestations, and left more diseases than it took away." The common error consists in generalizing the heroic treatment; an error which would find its counterpart in a determined abstinence from such a treatment under all circumstances. A little farther on, under the head of "Rational Medicine," we find, however, the following acknowledgment:—

> "The power of the medical art to palliate diseases is shown in a multitude of ways, active, cautious, and expectant. The pain of acute pleurisy is relieved by venesection; that of pleurodynia by anodynes and external applications. The pain of acute rheumatism is postponed by opium; that of gout by colchicum. Synovitis is favorably affected by rest; chronic rheumatism more frequently by exercise. Demulcents, opiates, and even astringents have their use in various irritations of the mucous membranes. Cathartics, laxatives, emetics, leeches, counter-irritants, cupping, hot and cold applications, etc., are of benefit in various local and general maladies."

A pretty good list this for a rationalistic doctor. The "heroical" practitioner would hardly ask for more, especially if he were permitted to fill up the terminal *et cetera* in his own fashion. We offer no criticism at the moment, on the limited pathology which looks to pain as the chief element in pleurisy, acute rheumatism and gout; or to the restricted view of the therapeutical agents mentioned, which would seem to limit their effects to the removal or mitigation of this pain. Dr. Bigelow's rationalism in medicine reminds us of the definition once made of orthodoxy by a zealous believer, in conversation with his friend, who differed from him on some question of theology. Orthodoxy, said the former, is my doxy,—heterodoxy is your doxy. Every physician will agree with the author in the superiority of rational medicine over all other methods of treating disease; but when the question comes up for consideration: What is the extent, what are the actual resources of rational or orthodox medicine? all the vexed questions on pathology and therapeutics, which have agitated the schools and tasked the powers of observation and reasoning of medical minds, from the earliest times down to the present day, are again opened. The author, in another page, would dismiss them all from court, as unworthy of argument and adjudication, by asserting, as his sincere belief, notwithstanding his previous admissions, as quoted above—

> "That the unbiased opinion of most medical men of sound judgment and long experience is made up, that the amount of death and disaster in the world would be less, if all disease were left to itself, than it now is under the multiform, reckless and contradictory modes of practice, good and bad, with which practitioners of adverse denominations carry on their differences at the expense of their patients."

We deny that any such opinion is held by enlightened medical men, while, at the same time, we protest against the unjust manner in which the concluding part of the assertion is stated, as if the question of modes of treatment were a scholastic one, an intellectual contest merely, between doctors, in which patients had a secondary and minor interest, and were merely used as subjects for experiment, in place of being regarded, as they actually are, the principals, for the preservation of whose health, and for the cure of whose diseases, doctors strain their faculties to the utmost. The assertion itself is not susceptible of direct proof, and must be taken as the creed of an individual, certainly not of the thinking part of the profession; nor, on the other hand, can it be refuted by direct evidence. But there is a large amount of collateral proof which would go to nullify it; as, for instance, the general fact, that, with the increase of population and the advance of civilization, from the dark ages onward, there has been a proportionate extension of medical teaching and increase of medical men. It is also on record, that, during the last three centuries, the average duration of human life has been progressively increasing; and it is also equally clear, that medical schools have multiplied, medical doctrines have been more numerous, and modes of practice more diversified, during this period, than for many centuries before. M. Marc d'Espine, in a late work on Comparative Mortuary Statistics, shows that the *probable life* at Geneva in the sixteenth century was rather less than five years; in the seventeenth century, eleven years; at the beginning of the eighteenth, twenty-seven years; at the end of the century, thirty-two years; and now it is forty-four years. M. Mallet had previously shown, that the mean duration of life in Geneva in 1833, was nearly double (or as forty years five months to twenty-one years and two months) that reached more than two centuries before.* At the present time the probable life in Bavaria is still as low as from ten to twelve years; and yet, surprising as it must seem to Dr. Bigelow and the non-medical intervention school, three-fifths of those who die in that kingdom receive no medical attentions whatever; whereas in Geneva, the want of medical attentions to the sick is of rare occurrence. One would hardly expect to see, after Dr. Bigelow's dogmatic assertion of the injurious consequences of medical treatment, the large qualifications, in fact the contradiction in the sentences which immediately follow it, and which read thus:—

> "But there is no probability that expectant medicine will ever prevail in its character as such. The amount of positive good which, in fifty centuries, art has brought to the assistance of medicine, although far more limited than we could desire, is, nevertheless, both sufficient and worthy to employ the talents of the best and most enlightened physicians."

We had been previously told by the author—

> "The great objects which medical practice professes to effect, and which there can be no doubt that it frequently does effect, are the following: 1. The cure of certain diseases. 2. The relief and palliation of all diseases. 3. The

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* Bell's *Regimen and Longevity*, pp. 23, 24.

safe conduct of the sick. In all these objects it sometimes fails; yet instances of its success are sufficiently numerous to establish the necessity of the existence of medicine as a profession."

We glean from the scattered propositions, postulates, and queer aphorisms of Dr. Bigelow, that medicine, as he understands it, is, after all, admissible, and may even do some good, provided it be practiced by physicians who are imbued with his notions and who adopt his creed. One's gravity is somewhat tasked by the following:—

> "Before commencing any course of treatment in a given case, two questions should always be asked: 1. Will it do good? 2. Will it do harm? A right answer to these questions will not fail to produce a right practice."

Just so. When the physician can anticipate, on approaching his patient, the whole march, the complications and the terminations of the disease, and the effects of different remedies on it, he will be sure to know how to manage it. Some simple-minded men, on recovering from the surprise into which they were thrown by this Delphic announcement, will ask whether this does not suppose an entire solution of the problem, without our yet knowing the steps by which it can be reached, or seeing a single difficulty that stood in the way removed. We confess to be among the number of the simple-minded. As far as we can get at the meaning of the author, his statements of medical errors and his recommendations of medical reform, though vaguely and contradictorily set forth, amount to the inculcation of a closer adherence to medical logic than obtains among either teachers or practitioners of medicine. Would that the excellent volume of Oesterlen were made a text-book in our schools—as a guide to a better and improved system of medical observation and of medical reasoning.

There is reason to believe that neither the "Rational Expositions" of Dr. Bigelow, nor the kindred work of Sir John Forbes, "Nature and Art in the Cure of Disease," can stand the scrutiny of medical logic, on the very point which the authors may be supposed to regard, in their reformatory labors, with the most complacency. Our reference is "Nature," as in their eyes the great curer and restorer. What, we would ask, is nature? We gain nothing in positive medicine by being told that all our medical agents are often of no avail, or are mischievous in the treatment of disease, and that our reliance ought to be on nature. But we repeat the question: What or who is nature? We find her personified, a *Bona Dea*, who watches over all the processes of the vital organism, rectifying them where they have gone wrong,—amending where the material has become damaged and imperfect,—casting out old and effete, and bringing in new and plastic substances. Is not this a mere play of imagination, which conveys no instruction, points to no ascertainable way, suggests no measurable means of cure? What is said by A. Comte of all knowledge, applies to medicine, viz., that it has to run through three stages: 1. That of fiction and poetry, simple faith, and dogmatic opinion. 2. Of arbitrary hypotheses, *a priori* abstraction, combination, or speculation. 3. The stage of sober but positive science, based upon a clear understanding of what it has to deal with.* Medicine is in the second of these stages, and is advancing to the third one; but the modern worshipers of Nature would, if their notions were adopted, throw it back into the first stage. Having erected nature into a kind of providence—and indeed it would be just as scientific and as explanatory to speak of the Deity himself setting up healing and curative and restorative processes as Nature doing these things—we suppose her to go to work with such a design, and according to such laws and principles as we just happen to be acquainted with. This leads to mysticism, and replaces the superstition of former times, when diseases were attributed to diabolic agency, and cures were believed to be performed by witchcraft. Disease is now often regarded as an existing thing and is to be driven away by Nature, another existing thing, and thus we have a double ontology. Nor is the substitution of vital force any better or more scientific. Little is gained in true or useful knowledge of medicine, by assuming that nature or the vital force bring about curative efforts, favorable crises, and finally a cure. But we have not room to pursue the subject, and must content ourselves with this brief glimpse of some of its bearings.

ART. V.—*On Animal and Vegetable Parasites of the Human Body; a Manual of their Natural History, Diagnosis, and Treatment.* By Dr. FREDERICH KUCHENMEISTER. Translated from the second German edition, by EDWIN LANKESTER, M.D., F.R.S. 2 vols., 8vo., pp. 738. Published by the Sydenham Society, London.

THE above is the title of a most elaborate treatise on the parasitic animals and plants of man. It is not merely a compendium of the labors of others, but, in addition, presents numerous and valuable observations of the author, Dr. Küchenmeister, one of the best of modern helminthologists.

It is now generally known that parasitic worms only reach maturity after passing through several stages of development, which occur successively in different animals, and sometimes exteriorly. Steenstrup, Küchenmeister, Von Siebold, Van Beneden, and others have carefully traced the successive development and migrations of some of the fluke and tape-worms, while the history of the thread-worms as yet remains in comparative obscurity.

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* F. Oesterlen, Medical Logic, p. 427.

As an example of the course of development of the tape-worms, attention may be directed to the history of the common tape-worm of man, (*Tænia solium,*) as traced by Dr. Küchenmeister.

1. The TAPE-WORM has a jointed, tape-like body, often many feet in length; and it inhabits the human small intestine. Its head is minute, and is provided with four circular suckers, and a short snout crowned with two circles of hooks.

2. The JOINTS, (*proglottides, or mature animals,*) which are constantly reproduced from the narrow portion of the tape-worm called the neck, are as constantly detached when perfected, and in this state are voided with the excrement. These separated joints are mature animals, with a hermaphroditic generative apparatus, and are self-impregnating. Under favorable circumstances, they may live and creep about for several days after expulsion from their host. The eggs they contain are more tenacious of life, and may be extruded or retained within the joints.

3. The EGGS, which may be swallowed by a hog, after extrusion, or with the parent joints, are hatched in the stomach of the latter animal.

4. The EMBRYOS thus produced, are minute globular sacs, provided with six hooks. They perforate the stomach of their host, and get into neighboring organs, or more frequently get into a blood-vessel, and are there whirled along with the current of blood until stopped in some distant organ: the liver, muscles, etc.

5. The embryo now loses its hooks, and becomes converted into a cyst about the size of pea, with a head like the parent tape-worm. This cyst is known as a HYDATID, or measle of pork, (*scolex, Cysticercus cellulosæ.*) By eating a piece of raw pork with such measles, the hydatids then become in the human small intestine the familiar tape-worm.

Dr. Küchenmeister describes four species of the tape-worm as found in man, of which one is a *Bothriocephalus,* and the others belong to the genus *Tænia.*

1. *Bothriocephalus latus,* as is well known, particularly infests the inhabitants of Russia and Switzerland. Its history has not yet been successfully traced. We have never seen this tape-worm from the inhabitants of the United States.

2. *Tænia solium* is the common tape-worm of Germany, England, and America. It is found associated with *Bothriocephalus latus* in France. In its larval condition it forms the measle of pork. The history of this

species, carefully studied by Dr. Küchenmeister, has been given above as an instance of the mode of development generally of the tape-worms.

Dr. Küchenmeister remarks, vol. i. p. 114:—

"We find this *Tœnia* very abundant wherever the breeding of pigs flourishes, as in Poland, Hungary, England, Pomerania, and Thuringia, and especially among those engaged in trades which bring them in contact with raw pork, and therefore with raw *Cysticerci*, (as butchers, cooks, eating-house keepers, etc.,) or in people who obtain portions of ready cooked or smoked sausages and hams from the butchers' shops. The most direct mode in which the transference may be effected, is, as experience has shown, the habit of eating raw pork. (Kleefeld's patient; Professor Merbach's observations; Thuringia, especially Nordhausen, Russia, Abyssinia.) Hence also, perhaps, arises the more frequent occurrence of *Tœnia solium* in temperate zones, and especially in Central Europe.

"The importance of the subject may excuse the prolixity of the following remarks: The reason why we find *Tœnia solium* so plentifully in butchers and their families, is, that the butchers contaminate their own hands in sausage-making, and also the blades of their knives in cutting up and selling meat. When they now wipe their mouths with the hands thus contaminated, or place the knife bedaubed with *Cysticerci* in their mouths, or, lastly, transfer these *Cysticerci* from the knife to the bread or sausages which they cut up for themselves, their families, or servants, the insignificant and scarcely perceptible *Cysticerci* are introduced into the mouth and swallowed. Cooks, and even housewives who cook and who have much to do with raw pork, infect themselves, partly by means of their hands or utensils, and partly by tasting the mixed masses of meat prepared from raw pork and other uncooked meats for the making of puddings before they are put into the frying-pan, or in the preparation of home-made sausages before drying.

"But we also see the possibility of the *Cysticerci* being introduced into private houses with the articles of animal food procured from the butchers' shops to be eaten without preparation, such as raw hams, and blood and liver sausages, especially when these articles of food are purchased by retail in small portions, when the *Cysticerci* have been transferred to them by the knife used in cutting them up. Thus, for example, my wife found *Cysticerci* in the water used in washing sausages, which must have been adhering to the hands of the butcher when filling the sausages, and thus have been transferred to the external surface of the gut. Lastly, the direct proof of these assertions has been furnished by myself in making the following experiments upon a murderer condemned to death: 72, 60, 36, 24, and 12 hours before execution, 12, 18, 15, 12, and 18 specimens of *Cysticercus cellulosœ* were administered to the criminal, partly in rice or vermicelli soup cooled to a blood heat, and partly in blood puddings from which the fat was removed and replaced by *Cysticerci*. The *Cysticerci* had already lain seventy-two hours in a cellar before I discovered them by chance, as I have stated further in 'Wittelshöfer's neuer medic. Wochenschrift, No. 1, 1855, and before I could administer them. The last administered had consequently lain about one hundred and thirty hours out of the living organism.

I hardly believe that those *Cysticerci* which had lain more than eighty hours were still capable of development, any more than I can believe this to be the case with the *Cysticerci* contained in smoked sausages and hams. On dissection, forty-eight hours after execution, I found ten young *Tœniœ*, of which indeed, six were deprived of their hooks, but four distinctly showed the hooks of *T. solium.* The little *Tœniœ* were 4–8 millim. in length, had exserted their hooks and proboscis, and attached themselves therewith to the intestine, and possessed a small band-like appendage, some 2–5 millim. long, which was notched or inverted at the extremity, as it is seen in those individuals which are found, for example, in the intestine of a dog three days after the administration of the *Cysticerci* of the rabbit."

We regard the *T. solium* as comparatively rare in the United States, which is rather remarkable when the fact is taken into consideration that hogs are extensively raised for food, though, as a counteracting influence to the production of tape-worms from the hydatids of measly pork, these are destroyed by the latter being used only after it is cooked.

a. Cysticercus cellulosæ, the scolex, larva, or hydatid of *T solium*, though having for its normal position the tissues of the hog, is occasionally found in similar parts of the body of man.

b. Cysticercus ternuicollis, another hydatid occasionally found in man, though belonging commonly to the domestic ox, sheep, horse, hog, etc. is the larva of the *Tænia marginata* of the dog.

We never met with these two species of *Cysticerci* in man in the United States. Our friend Dr. Weinland has recently described a new species, *C. acanthotrias*, obtained from a woman, at Richmond, Virginia.*

3. *Tænia mediocanellata* is a new species of tape-worm of man, discovered by Dr. Küchenmeister, in Germany.

4. *Tænia nana*, another new species, of small size, noticed by Dr. Küchenmeister, was discovered recently by Dr. Bilharz, in a boy in Egypt.

To these four tape-worms may now be added a fifth, recently described by Dr. Weinland, under the name of *T. flavopunctata*, and obtained from a child in Boston.

Dr. Küchenmeister describes two species of hydatid of the genus *Echinococcus* as parasitic in man; the two having been previously confounded together.

1. *E. scoliciipariens* (*E. veterinorum* of earlier authors) occasionally found in man, is common in the domestic herbivorous animals. The experiments of Von Siebold and Küchenmeister, prove that it is transformed in the dog into a tape-worm, the *Tænia echinococcus* of Von Siebold.

2. *E. altricipariens* (*E. hominis, autorum*) is found in various organs of man and the domestic animals.

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* An Essay on the Tape-worms of Man. By D. F. Weinland, Ph.D.; Cambridge, 1858.

Dr. Leidy met with this species, a few years since, thousands in number, contained in a cyst of about three inches in diameter, occupying the abdominal muscles, in the right iliac region, of an English sailor boy, in the dissecting rooms of the University of Pennsylvania. Though the subject had been injected with chloride of zinc, so as to bleach all the tissues of the body, three days subsequently the *Echinococci* were still living.

Besides the prophylaxis, the author gives a full account of the various modes of treatment for the expulsion of tape-worm.

Of fluke-worms, Dr. Küchenmeister describes five species as having been found in man. The two large species, *Distomum hepaticum* and *D. lanceolatum*, rarely found in man, are common in the biliary passages and portal vein of the deer, ox, sheep, etc.

Distomum heterophyes, Siebold, and *D. hæmatobium*, Bilharz, were both recently discovered in Egypt by Dr. Bilharz; the former in great numbers, in one instance, in the intestine of a boy; the latter very frequently in the portal system of veins.

The fifth species, *D. ophthalmobium*, Diesing, has only been found once, in Germany, in the eye of a child.

Of thread or round worms, Dr. Küchenmeister describes seven undoubtedly different species.

1. *Tricocephalus dispar* inhabits the neighborhood of the ilio-colic valve, that is to say, the terminal portion of the ilium and the commencement of the colon. *Trichina spiralis* of the human muscles is suspected to be the larva of the former.

Both the *Tricocephalus dispar* and *Trichina spiralis* have been a number of times observed in this country.

2. *Oxyuris vermicularis* infests the lower portion of the small intestine. The history of its successive stages of development is unknown.

According to our observations, this is the most common of all human intestinal worms; most individuals, perhaps, once in the course of a lifetime having acted the part of host to them in this country. We suspect that the larval form may be introduced into man, from the larvæ of insects, (in which they may pass a portion of their existence,) eaten in fruit, such as apples, pears, etc. We have found injections of ol. olivæ, ℥ij., ol. terebinth. ʒi., one of the most useful remedies in destroying this pest.

3. *Ascaris lumbricoides* is a common species in the human small intestine.

According to our observations, this is the next most common species of intestinal worm to the *Oxyuris vermicularis* in the United States; then follows the *Tricocephalus dispar*, with its suspected larval form, the *Trichina spiralis;* and lastly we have the *Tænia solium*.

4. *Strongylus gigas* has been occasionally found in the kidneys of man.

We have frequently observed it in the kidneys of the dog, wolf, and mink.

5. *Strongylus longevaginatus*, Diesing, (*Filaria bronchialis hominis*, Rudolphi,) has been observed a few times in the pulmonary tissue and bronchial glands.

6. *Ancylostomum duodenale*, Dubini, is a small nematoid worm, common in the human duodenum, in Egypt.

7. *Filaria medinensis;* the medina or guinea worm, one of the most serious in its effects of all human helminthes. It is common in tropical Africa and Asia, and was introduced into tropical America.

An immature *Filaria* has also been noticed in a few instances in the eye, in Germany.

Following Van Beneden and Vogt, Dr. Küchenmeister separates the genus *Linguatula* or *Pentastomum* from the true helminthes, and places it in the class of articulated animals, and with Vogt considers it as belonging to the order of Acarina (Mites.) Two species have been noticed in man.

1. *Linguatula constricta* is not uncommon, encysted in the livers of negroes in Africa. We would ask if it is not the same as *Pentastomum euryzonum*, Diesing, which Dr. Leidy and Van Beneden found in apes.

2. *Linguatula ferox*, or *Pentastomum denticulatum*, Rud., according to Zenker, as stated by Dr. Küchenmeister, is not uncommon in the liver of man, in Germany.

In a second family of the Acarina, Dr. Küchenmeister describes the common entozoon of the sebaceous follicles, the *Acarus folliculorum*.

Dr. P. H. Cabell,* of Richmond, Virginia, has described and figured a curious parasite found in company with the *Acarus folliculorum*. We do not know what to make of it. It is represented as having eight legs, like the *Acari*, but the femora and tibiæ are as long as those of insects.

In the family of the itch mites, *Acarida*, the author describes the common itch mite, *Acarus Scabiei*, and gives its history and treatment. The author further adds an account of the itch mites of the cat, dog, sheep, ox, and hare, as occasionally transferable to man.

In the family of the ticks, *Ixodida*, he describes the *Ixodes ricinus*, and the *I. marginatus*, and mentions three American species, the *I. americanus*, *I. humanus*, and *I. crenatus*.

The author also gives an account of the chicken louse, *Dermanyesus avium*, and the mites of cheese and dried fruits, as sometimes proving a source of irritation to man.

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* Virginia Med. and Surg. Journal, vol. i. p. 14.

Of plant mites, Dr. Küchenmeister describes the *Leptus autumnalis*, as common in Europe, among gooseberry bushes and grass. During harvest it penetrates the skin of the reapers, often in immense numbers, producing troublesome itching, inflammation, and even fever. We have frequently observed a species of *Leptus* in similar positions in this country, but do not recollect of having heard of its being a source of annoyance to man.

Among the true insects, Dr. Küchenmeister gives a description, etc. of the human lice, of which he notices the *Pediculus capitis*, the *P. vestimenti*, and the *Phthirius pubis*. All of these have been observed upon the whites, blacks, and Indians of this country.

Of hemipterous insects, parasitic to man, the author describes the common bed-bug, *Acanthia lectularia*.

Among dipterous insects, Dr. Küchenmeister places the flea, of which he describes the two species; the common flea, *Pulex irritans*, and the chigger of tropical America, *Pulex penetrans*.

Under the head of true flies, the author refers to the larva of a species of bot-fly, or *Œstrus*, as parasitic in man, in South America. Thomas Say, a long time since, gave a description* of the larva of this *Œstrus*. Keferstein† has quite recently published a most elaborate paper, in which the question is discussed whether there is a true *Œstrus humanus*. The imago producing the *Œstrus* larva in man has not yet been positively ascertained, but it is suspected to be the *Cuterebra noxialis*, a bot-fly which is obnoxious to the cattle of South America. Dr. LeConte, of this city, informs us that the attack of the *Œstrus* on man is very common in Honduras. From some of his companions, who had the larvæ beneath the skin, about the shoulders, pectoral regions, and loins, he obtained a dozen specimens. The persons never knew when the eggs were deposited; nor was Dr. LeConte able to ascertain the character of the perfect insect.

Dr. Küchenmeister refers to the larvæ of the flower-flies *Anthomyia scalaris* and *A. canicularis*, and of the flesh-flies *Musca vomitoria*, *M. carnaria*, *M. domestica*, and *M. stabulans* as accidental parasites of man.

We have met with two instances in this city in which the larvæ of a species of *Anthomyia*‡ produced all the symptoms of ordinary cholera morbus; and another instance in which pain and vomiting were produced by the larvæ* of the bluebottle-fly, *Musca vomitoria?*

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* Jour. Acad. Nat. Sci., Phil., ii. 356.

† Verh. des Zool. Bot. Vereins in Wien, 1856, 637.

‡ In one instance the young larvæ appear to have been swallowed with some cold boiled cabbage. A number of individuals were expelled in both directions. Specimens still preserved present the following characters:—Larvæ from two to three lines long by one line broad, brown in color, semi-elliptical, divided into twelve seg-

As parasitic flies Dr. K. refers to the gnats *Tipulida*, and the sand-flies *Simulida.* To these we may add our mosquitoes, *Culicida*, and flies of the genera *Tabanus*, *Chrysops*, etc.

The second division of Dr. Küchenmeister's valuable work is devoted to the consideration of the vegetable parasites of man. He commences with the quotation: "All vegetable parasites which are found on animal bodies belong to the class *Cryptogamia*, and to the orders *Algæ* and *Fungi* exclusively."

Of Algæ, the yeast-plant, *Cryptococcus cerevisiæ*, is described first. It is found in yeast; and may be developed morbidly in the secretions of the alimentary canal.

The *Merismopœdia*, or *Sarcina ventriculi*, is described as a not unfrequent algous parasite of the human stomach, and is mostly met with through vomiting. The author observes that neither Virchow nor Lebert ever saw this plant associated with the preceding. We saw the two plants abundantly commingled in a frothy liquid, vomited by an adult male patient in St. George's Hospital, in London, in June, 1850.

Leptothrix buccalis is the remarkable filamentary plant so constantly found in every one's mouth.

Dr. Küchenmeister describes six species of *Leptomitus*, of which *L. urophilus* is found in unhealthy urine; *L. Hannoverii*, found on the tongue and pharynx in typhus, pneumonia, pleurisy, etc.; *L. epidermidis*, found once in eczema-like vesicles of the epidermis; *L. uteri* and *L. muci uterini* found in uterine discharges; and *L. oculi*, found in the eye.

Lastly, the author describes as an alga a filamentary plant found in the intestines, the *Oscillaria intestini.*

All the algæ, except the *Leptomitus oculi*, appear to be innocuous.

Of fungi, Dr. Küchenmeister describes fourteen species which have been found parasitic in man. Many of these not only accompany, but appear to be

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ments, which are minutely shagreened, furnished dorso-laterally each with six posteriorly divergent spines, and ventrally with a transverse row of small conical tubercles; head bipapillate, with a pair of hooks; caudal segment obliquely truncated, provided with two elevated spiracles, and fringed with six spines.

* These larvæ are six lines long and one line broad, anteriorly acute, posteriorly obtuse, minutely shagreened; and the segments each provided with a transverse row of minute tubercles; head bipapillate, with a pair of hooks; caudal segment complex: dorsally having a large pit margined with a coronet of tubercles, and furnished at bottom with a pair of spiracles; ventrally on each side of the anal aperture there is a triangular, brown tubercle, and behind it, a transverse ridge terminating in a pair of conical tubercles.

the cause of troublesome cutaneous diseases, which are contagious through the agency of the fungous spores.

The *Trichophyton tonsurans* is the cause of Porrigo scutulata or herpes tonsurans.

A second species of *Trichophyton* accompanies Plica polonica; and a third species was detected by Lebert in the scabs of an ulcer of the leg.

Microsporon Audouini accompanies Porrigo decalvans; a second species, *M. mentagrophytes*, is the cause of Mentagra; and a third, *M. furfur*, is the cause of Pityriasis versicolor.

Achorion Schœnleinii is the cause of Favus.

Oidium albicans is the fungus plant of Thrush or Aphthæ.

The remaining fungi are as follow: One of the lungs, several times noticed; two of the external auditory meatus; the nail fungus; *Mucor mucedo* from a cavity of the lungs; and *Puccinia Favi* accompanying *Achorion Schœnleinii* in Favus.

In conclusion, we take the opportunity of recommending the highly valuable work of Dr. Küchenmeister to the attention of American physicians, and hope for their benefit it may be republished in this country.

ART. VI.—*The Science and Art of Surgery; being a Treatise on Injuries, Diseases, and Operations.* By JOHN ERICHSEN, Professor of Surgery, and of Clinical Surgery in University College, etc. Second American, from the second enlarged and carefully revised London edition. 8vo., pp. 996. Philadelphia: Blanchard & Lea, 1859.

THE appearance of another edition of this deservedly popular and standard work, enlarged as it is by nearly one hundred pages of new matter and a large number of wood-cuts, will be welcomed by the profession of this country, which received Mr. Erichsen five years ago as an entire stranger. The present edition has been carefully revised, and many valuable additions have been made. As a complete system of surgery, however, it cannot be considered as perfect, as some subjects have been neglected which should have received attention. We specify, in particular, the diseases of the eye and ear, which have been entirely excluded from its pages. The faults of omission, however, can be easily remedied, and do not detract much from the value of the work, which now holds the same position as that of Watson on the Practice of Medicine. We have no hesitation in saying that Mr. Erichsen has succeeded in producing the best surgical work in the English language, and as such we give it our hearty commendation. We notice that the present edition appears without the name of an American editor, but a few notes and wood-cuts have been added to illustrate American surgery.

Art. VII.—*A Practical Treatise on the Diseases of Children.* By D. Francis Condie, M.D., etc. Fifth edition, revised and enlarged. 8vo., pp. 762. Philadelphia: Blanchard & Lea, 1858.

We should deem it an act of supererogation to do more than notice the excellent work of Dr. Condie, which first appeared fifteen years ago, and is now presented to us as the fifth edition; sufficient commendation for its high worth and the position which it assumed from the very commencement as a standard work upon pædiatrics. The author has indeed written a "practical treatise," and the young student, as well as the practitioner, will find that every subject has been discussed with the accustomed clearness and fullness of the author. We congratulate Dr. Condie upon the success of his work, which must be classed among the very best in any language.

Art. VIII.—*The Physician's Pocket Day-Book, Visiting List, Diary, and Book of Engagements for* 1859. Philadelphia: C. T. Price & Co.

Our thanks are due to the publishers for this pocket-book, which will be found of convenience to the practitioner in his daily routine of visits. Among other things, it contains the code of ethics, a list of poisons and their antidotes, the Marshall Hall method for the treatment of asphyxiated persons, a list of the different remedial agents and their doses, besides other subjects of importance. It is one of the best little manuals of its kind with which we are acquainted.

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Original Communications.

Art. I.—*Contributions to Obstetric Jurisprudence.* By Horatio R. Storer, M.D., of Boston.

CRIMINAL ABORTION (Continued.)

III. ITS VICTIMS.

We have hitherto discussed abortion in the abstract, as a crime, and in its relations to the community at large. We have seen its heinous nature, and its awful extent.*

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* Since our last article, the report of the Committee appointed in 1858 to investigate the Health Department of the City of New York has appeared, and we find that our statements regarding the frequency of the crime in the metropolis are fully cor-

The division of the subject now to be examined naturally presents itself under a fourfold aspect, numerical, relational, social, and medical; representing respectively the multitude of the victims of abortion, their character as parent and child, their standing in the community, and the degree, whether unto death or otherwise, of their suffering.

So far as statistics will at present allow, the numerical relations of the victims of abortion have already been fully discussed, the yearly thousands of fœtal and the frequent maternal deaths; one sacrifice at least, that of the child, being implied in every case.

Various incidental questions suggest themselves in this connection, curious, and by some, though erroneously, thought to be of judicial importance. Two of them will be here adverted to; they are the age of the mother and that of the fœtus.

It was formerly supposed, as in infanticide, that criminal abortion was seldom resorted to save for the concealment of shame; and as seductions, confessedly frequent in comparison with adultery, are most common in youth, it was laid down as probable that wilful abortions are most frequent between the years corresponding, from sixteen to twenty-five. Subsequent experience, however, has disproved this conclusion, and it is evident that the only real limit to its later occurrence is the menstrual climacteric. In many instances of marriage, abortions are resorted to at once, in others after the family has reached a certain point, and are thence regularly continued.

The age of the fœtus is of much more interest; not, as will ultimately appear, for the same reason as in cases of infanticide, but as proving to a certain extent one of the facts we have already considered, the error prevalent regarding the commencement of fœtal life.

It was Orfila's opinion that criminal abortion was most frequent in the two first months of pregnancy. This would naturally have been supposed the case, as then some doubt might always obtain regarding its existence, and the excuse that the measures resorted to were for the purpose of preventing ill effect from an abnormal menstrual suppression would be more

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roborated. Not merely are additional official statistics on this point given (pp. 182, 183), but valuable testimony from Drs. Griscom (pp. 25, 30), McNulty (p. 55), Francis (p. 64), and Bulkley (p. 133). Dr. Reese's paper on Infant Mortality, republished by the Committee (pp. 90–100), from the Transactions of the American Medical Association for 1857, also contains incidental reference to the frequency of abortion, and for its direct and earnest dealing with the subject deserves unqualified commendation.

In this connection we would call attention to the evidence of the extent of the crime in Boston, afforded since our own remarks upon that point were in type, by Dr. Walter Channing. (Boston Med. and Surg. Journal, March 17, 1859.)

available. Devergie, on the other hand, was inclined to put the limits of greatest frequency at from three months to four and a half; while Briand and Chaudé thought the crime more common in the third month than the fifth, and in this last month much more frequent than even in the first or second. Tardieu also came to a similar conclusion.* He ascertained, that of 34 cases investigated by himself, 25 were in from the third to the sixth month, most in the third; 5 in the two first months; 4 in the seventh and eighth; or that the cases in the third month, or shortly after, were five times as numerous as at either an earlier or a later period, and nearly three times as numerous as in both combined.

Upon examining the Register of the Morgue, we find its statistics strikingly corroborative of these deductions. We have already seen that from 1837–54 there had been deposited at the Morgue 692 fœtuses of less than nine months. Of these,

23	were from	the	first to the second month;
79	"	"	second to the third;
108	"	"	third to the fourth;
158	"	"	fourth to the fifth;
150	"	"	fifth to the sixth;
97	"	"	sixth to the seventh;
48	"	"	seventh to the eighth;
29	"	"	eighth to the ninth.

It has been stated that 519, or five-sixths of them all, were not over six months, and it now appears that on a scale twenty times larger than that given by Tardieu from his own experience, nearly two-thirds of the fœtal deaths induced by abortion were in from the third to the sixth month of pregnancy; the three periods included giving a much larger proportion than any others, and the two last of them being almost identical. The extreme paucity shown by the above table in the first and ninth months, and the decrease in the seventh and eighth from those preceding, are worthy of remark. It is probable that the sudden increase may be attributed to mental reaction after the first shock occasioned by the absolute certainty of pregnancy is past; and the subsequent decrease to the fact that in many attempted criminal abortions during the later months children are born alive, the mother's courage then proving insufficient for infanticide and its greater and more probable punishment.

The truth seems to be that while frequently the crime is committed in the very earliest period of pregnancy, in the belief that possibly all alarm may be false, in most cases the woman waits a month or two to be sure that she really is pregnant. After the sixth month the comparative rarity of the crime is undoubtedly owing to the fact that fœtal life is then rendered certain by the perceived movements of the child, the more strongly as pregnancy advances.

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* Annales d'Hygiène Publique, 1856, p. 122.

It was formerly thought that the induction of criminal abortion was confined to the unmarried alone; there exists, however, abundant proof to the contrary. Had such been the fact it would be reasonable to suppose that with the increase of marriages, the number of premature and still-births would have lessened. In proportion, however, as the number of marriages has increased, so has the number of fœtal deaths, and in similar ratio the number of living births has declined; proving, as Husson was compelled to acknowledge of Paris, "a decrease in the fecundity of legitimate unions,"* explainable in nowise but by a criminal cause. Direct statistics on this point are still wanting, and must come, almost entirely, from medical men. The writer's published experience has been already referred to; subsequent practice has only confirmed it.

Again, the victims of abortion are not confined to the inhabitants of cities. Of the prosecutions in France during 1851–53, it appears that but little more than a tenth of the whole number occurred in the Department of Seine.† But we have already furnished much stronger evidence on this point.

Finally, though the excessive extravagance of the day, entailing as it does to so many an annual expenditure incommensurate with their income, is accountable in no small degree for the crime, yet it cannot always be alleged. There is too much reason to believe that with our communities it is as with others. In France it appears that the poor and uneducated have on the whole the largest families, contrary in some respects to established hygienic rules; while, on the other hand, the rich are inclined as far as possible to restrict the number of their children, often indeed stipulating beforehand, at marriage or previously, that such shall be few or none.‡

But not only must we believe that this crime prevails in our midst to an almost incredible extent among the wealthy and educated and married; we are compelled to admit that Christianity itself, or at least Protestantism, has failed to check the increase of criminal abortion. It is not astonishing to find that the crime was known in ancient times, as shown by evidence previously given, nor that it exists at the present day among savage tribes, excused by ignorance and superstition; but that Christian communities should especially be found to tolerate and to practice it, does almost exceed belief.

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* Les Consummations, etc.

† Comptes Rendus Annuels, etc.

‡ MAYER, Des Rapports Conjugaux, considérés sous le triple point de vue de la population, de la santé et de la morale publique. Paris, 1857.

In the previous remarks, the French have been compared with our own people, not merely because of their published statistics, but because from their loose morals and habits of life they might be thought to represent the extreme to which the crime would be likely to obtain among civilized nations. We have shown reason to suppose that we equal them in guilt, if we do not exceed them. Now it must be borne in mind that the French are Catholic; that the rules of that church do not, as has been generally supposed, permit abortion in the earlier months,* but that they rigidly exercise over fœtal life throughout pregnancy the most absolute guard and supervision;† instances of this in cases where craniotomy is supposed to be indicated, are familiar to every practitioner. The church, here omnipotent against the physician, and desiring that every created human being should receive the benefit of baptism, demands that fœtal death must have taken place previously to the operation proposed. It does not seek for the signs of fœtal life, but takes this for granted and requires that its absence must be proved before allowing the removal of the child, even though this is necessary to save the mother's life.

The rule runs thus: "Sedulam operam dent sacerdotes, ut quantum poterunt, impediant nefandum illud scelus quo adhibitis chirurgicis instrumentis infans in utero interficitur. Omnis fœtus quocumque tempore gestationis editus baptizetur, vel absolute, si constet de vitâ; vel sub conditione, nisi evidenter pateat eum vitâ carere."‡

In cases where instrumental delivery is absolutely necessary, the ceremony of baptism as ordinarily administered is of course impossible. But as this is deemed so important by the Catholic Church,§ even to the sacrifice of the mother, any means of overcoming this obstacle, fatal to countless maternal lives, should be accounted, if found practicable, of the utmost importance. For this purpose, therefore, I do not hesitate to recommend intra-uterine baptism, the consecrated element being carried to the child, if too high to be reached by the hand, by a sponge and staff, or if necessary, by a syringe, as was long ago sanctioned by the theologists of the

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* CANGIAMILA, Embryologia Sacra, p. 15.

† In verification of this statement I am enabled to quote from the last authorized edition of the Canon Laws of the Church of Rome. "Omnes, qui abortûs seu fœtûs immaturi, tam animati quam inanimati, formati vel informis, ejectionem procuraverint, pœnas propositas et inflictas tam divino quam humano jure, ac tam per canonicas sanctiones et apostolicas constitutiones quam civilia jura adversus veros homicidas incurrere, hâc nostrâ perpetuo valiturâ constitutione statuimus et ordinamus." REIFFENSTUELL, Jus Canonicum Universum, tome iii. Paris, 1854.

‡ Decreta Synodi plenariæ Episcoporum Hiberniæ, apud Thurles habitæ anno 1850. Art. de Baptismo, p. 20.

§ Dublin Review, April, 1858, p. 100.

Sorbonne;* in the absence of a clergyman, if the case is urgent, the rite accounted so sacred being performed by the physician in attendance rather than to allow the death of the mother. I know that many of the profession, from fear of ridicule or dislike to sanction what they do not believe in, would shrink from such a duty. Is it not, however, due to humanity in every way to prevent this frequent murder? for such, by our apathy and neglect, the mother's death in these cases becomes. Can we, as Christians, refuse *any* aid? I am not ashamed to acknowledge that for myself, though no Catholic, I have performed this intra-uterine baptism, where delivery without mutilation was impossible. I could neither conscientiously assert the child's death, nor allow the mother to linger till it should occur, while the friends, in the absence of a priest, whose presence it was impossible to procure for many hours, would not permit the operation. Remonstrance was useless; had I refused I should have been morally responsible for the almost inevitable death of the woman; it was, therefore, simply my duty.

I shall now quote from an admirable letter I have lately received from the Catholic Bishop of Boston. The extracts are couched in so forcible language, and their spirit is so thoroughly Christian, that I need not apologize for their length, or that they recapitulate arguments I have already advanced.

"The doctrine of the Catholic Church," remarks Bishop Fitzpatrick, "her canons, her pontifical constitutions, her theologians without exception teach, and constantly have taught, that the destruction of the human fœtus in the womb of the mother, *at any period from the first instant of conception,* is a heinous crime, equal, at least, in guilt to that of murder. We find it distinctly condemned as such even as far back as the time of Tertullian, (at the end of the second century,) who calls it *festinatio homicidii,* a hastening of murder. The Pope, Sixtus the Fifth, in a bull published in 1588, subjects those guilty of the crime to all the penalties, civil and ecclesiastical, inflicted on murderers. It is denounced and reprobated in many other canons of the church.

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* DEVENTER, 1734, p. 366; STERNE, Tristram Shandy, p. 54; Med. Times and Gazette, Aug., 1858, p. 196. Though the fact of this decision has been doubted, it is nevertheless strictly true. Through the kindness of Bishop Fitzpatrick I have been favored with a copy of BARRY's Medico-Christian Embryology, as presenting upon this point the authorized and generally received doctrine of the Catholic Church. I quote the following from the chapter "On Baptism in Impracticable and Difficult Labors:"

"In case of impacted head and at all times that one is obliged to apply the forceps, whether at one of the straits or in the pelvic excavation, it becomes necessary to baptize the child on the part which presents at the uterine orifice after the rupture of the bag containing the waters.

"In order to baptize the child, a syringe charged with natural water may be used. If this be not at hand, a person may use a sponge, or a linen or cotton rag, wetted with water, which is to be carried to the child by the fingers, a pair of forceps, or any other suitable contrivanee, and then squeezed or pressed on the surface of the part presenting." (Loc. cit., p. 45.)

"Any person, whether man, woman or child, may baptize an infant when in danger of death." (Ibid., p. 76.)

If the facts now stated should be generally known and acted upon by the profession, hundreds of lives, infant and maternal, would annually be saved.

"The reason of this doctrine (apart from the authority of the church) must, it seems to me, appear evident upon a little reflection. The very instant conception has taken place, there lies the vital germ of a man. True, it is hidden in the darkness of the womb, and it is helpless; but it has sacred rights, founded in God's law, so much the more to be respected because it is helpless. It may be already a living man, for neither mothers nor physicians can tell when life is infused; they can only tell when its presence is manifested, and there is a wide difference between these two things. At any rate, it is from the first moment potentially and *in radice* a man, with a body and a soul destined most surely by the will of the Creator and by his law, to be developed into the fullness of human existence. No one can prevent that development without resisting and annulling one of the most sacred and important laws established by the Divine Author of the universe, and he is a criminal, a murderer, who deals an exterminating blow to that incipient man, and drives back into nothingness a being to whom God designed to give a living body and an immortal soul.

"From this it follows that the young woman whose virtue has proved an insufficient guardian to her honor, when she seeks by abortion to save in the eyes of man that honor she has forfeited, incurs the additional and deeper guilt of murder in the eyes of God, the judge of the living and the dead. Who can express what follows with regard to those women, who, finding themselves lawfully mothers, prefer to devastate with poison or with steel their wombs, rather than bear the discomforts attached to the privilege of maternity, rather than forego the gaieties of a winter's balls, parties, and plays, or the pleasures of a summer's trips and amusements?

"But abortion," the Bishop continues, "besides being a direct crime against a positive law of God, is also an indirect crime against society. Admit its practice, and you throw open a way for the most unbridled licentiousness, you make woman a mere instrument for beastly lust. Every woman is somebody's mother or daughter or sister or wife; or she bears all these relations at once. Whatever protection, therefore, we would claim for a woman because she stands in any of these relations to us, we should also extend to all women, because they bear some one of all these relations to others. Most assuredly, then, we should remove none of the safeguards that protect female virtue. But if we take away the responsibility of maternity, we destroy one of its strongest bulwarks.

"It affords me pleasure," he concludes, "to learn that the American Medical Association has turned its attention to the prevention of criminal abortion, a sin so directly opposed to the first laws of nature, and to the designs of God, our Creator, that it cannot fail to draw down a curse upon the land where it is generally practiced."*

Such being the doctrine of the Catholic Church, and statistics nevertheless proving that its so stringent statutes against the destruction of fœtal life, enforced alike by denouncement and excommunication, are constantly broken in Catholic France, it is more than probable, from the existence of this fact, in addition to all the various causes of the crime we have seen equally prevailing there and in this country, that the actual number of abortions is much greater with ourselves; at least with the American and native portion of our population. We have indeed shown that this is really the case in Massachusetts.†

Viewing this subject in a medical light, we find that death, however frequent, is by no means the most common or the worst result of the attempts at criminal abortion. This statement applies not to the mother alone, but, in a degree, to the child.

We shall perceive that many of the measures resorted to are by no means certain of success, often indeed decidedly inefficacious in causing the immediate expulsion of the fœtus from the womb; though almost always producing more or less severe local or general injury to the mother, and often, directly or by sympathy, to the child.

The membranes or placenta may be but partially detached, and the ovum may be retained. This does not necessarily occasion degeneration, as into a mole or hydatids, or entire arrest of development. The latter may be partial, as under many forms, from some cause or another, does constantly occur; if from an unsuccessful attempt at abortion, would this be confessed, or indeed always suggest itself to the mother's own mind? Fractures of the fœtal limbs prior to birth are often reported, unattributable in any way to the funis, which may amputate indeed, but seldom break a limb. A fall, or a blow, is recollected; perhaps it was accidental, perhaps not, for resort to these for criminal purposes is very common. In precisely the same manner may injury be occasioned to the nervous system of the fœtus, as in a hydrocephalic case long under the writer's own observation, where the cause and effect were plainly evident. Intra-uterine convulsions have been reported; as induced by external violence they are probably not uncommon, and the disease thus begun may eventuate in epilepsy, paralysis, or idiocy.

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* MS. Letter, dated Nov. 14th, 1858.

† It is not of course intended to imply that Protestantism, as such, in any way encourages, or indeed permits, the practice of inducing abortion; its tenets are uncompromisingly hostile to all crime. So great, however, is the popular ignorance regarding this offence, that an abstract morality is here comparatively powerless; and there can be no doubt that the Romish ordinance, flanked on the one hand by the confessional, and by denouncement and excommunication on the other, has saved to the world thousands of infant lives.

To the mother there may happen correspondingly frequent and serious results. Not alone death, immediate or subsequent, may occur, from metritis, hemorrhage, peritonitic or phlebitic inflammation, from almost every cause possibly attending not merely labor at the full period, comparatively safe, but miscarriage,—increased and multiplied by ignorance, by wounds and violence; but if life still remain, it is too often rendered worse than death.

The results of abortion from natural causes, as obstetric disease, separate or in common, of mother, fœtus or membranes, or from a morbid habit consequent on its repetition, are much worse than those following the average of labors at the full period. If the abortion be from accident, from external violence, mental shock, great constitutional disturbance from disease or poison, or even necessarily induced by the skilful physician in early pregnancy, the risks are worse. But if, taking into account the patient's constitution, her previous health and the period of gestation, the abortion has been criminal, these risks are infinitely increased.* Those who escape them are few.

In thirty-four cases of criminal abortion reported by Tardieu, where the history was known, twenty-two were followed, as a consequence, by death, and only twelve were not. In fifteen cases necessarily induced by physicians, not one was fatal.†

It is a mistake to suppose, with Devergie, that death must be immediate, and owing only to the causes just mentioned. The rapidity of death, even where directly the consequence, greatly varies; though generally taking place almost at once if there be hemorrhage, it may be delayed even for hours where there has been great laceration of the uterus, its surrounding tissues, and even of the intestines;‡ if metro-peritonitis ensue, the patient may survive for from one to four days, even indeed to seven and ten. But there are other fatal cases, where on autopsy there is revealed no appreciable lesion; death, the penalty of unwarrantably interfering with nature, being occasioned by syncope, by excess of pain, or by moral shock from the thought of the crime.*

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* PASSOT, Des dangers de l'avortement provoqué dans un but criminel; Gazette Méd. de Lyon, 1853.

† Ann. d'Hygiène, 1856, p. 147.

‡ DUBOIS and DEVERGIE, ibid., tome xix. p. 425; tome xxxix. p. 157.

That abortions, even when criminally induced, may sometimes be safely borne by the system, is of little avail to disprove the evidence of numberless cases to the contrary. We have instanced death. Pelvic cellulitis, on the other hand; fistulæ, vesical, uterine, or between the organs alluded to; adhesions of the os or vagina, rendering liable subsequent rupture of the womb, during labor or from retained menses, or, in the latter case, discharge of the secretion through a Fallopian tube and consequent peritonitis; diseases and degenerations, inflammatory or malignant, of both uterus and ovary; of this long and fearful list, each, too frequently incurable, may be the direct and evident consequence, to one patient or another, of an intentional and unjustifiable abortion.

We have seen that in some instances the thought of the crime, coming upon the mind at a time when the physical system is weak and prostrated, is sufficient to occasion death. The same tremendous idea, so laden with the consciousness of guilt against God, humanity, and even mere natural instinct, is undoubtedly able, where not affecting life, to produce insanity. This it may do either by its first and sudden occurrence to the mind; or, subsequently, by those long and unavailing regrets, that remorse, if conscience exist, is sure to bring. Were we wrong in considering death the preferable alternative?

IV. ITS PROOFS.

It is by no means an easy thing in all cases to obtain evidence that an abortion has occurred; still more difficult, that it has been intentionally induced. As most laws read, it is necessary at the outset to prove the existence of pregnancy; as many still stand, it must be shown that the woman has quickened. These requisitions are unwise and unjust, and under them, if insisted on by adroit counsel, it is almost useless to pursue prosecution. In the earlier months, before quickening has occurred or the fœtal pulsations have become evident to the ear, it is impossible, as I have elsewhere insisted,† ever to be sure of the existence of pregnancy, and yet attempts at its termination are then in no degree less criminal. The only infallible sign of pregnancy is the sound of the fœtal heart, not always to be detected, even by the double stethoscope.

Putting aside, therefore, the question of the existence of pregnancy and of fœtal life, as taken for granted on the one hand by the attempt at their termination, and as proved on the other by this result, it is found that the evidence of abortion classifies itself into proofs of its occurrence, of its commission, of the criminal intent, and of the identity of the party accused.

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* Ibid.

† Review of MONTGOMERY's Signs of Pregnancy. This journal, March, 1857, p. 249.

1. *The Occurrence.*

The abortion may perhaps be known to have taken place by confession or witness; in either case requiring no further demonstration. Instances are not rare, however, where suspicion merely may exist, and the fact must be proved by collateral testimony; and this in two cases, where the woman is still alive, and where she is dead.

The general history of the case, even if pregnancy and delivery be equally denied, may throw some light on its true nature. This as given, no matter how affected by the evidence of interested or implicated witnesses, may be probable or improbable; as in an instance related by Burns,* where her sudden lessening in bulk was ascribed by a patient to a night's profuse sweating, of course an impossible result. But, on the other hand, care is necessary lest from its rarity of occurrence or its improbability, the reality should be disbelieved. Cases are on record where innocent women, suffering from retention of menses or from ovarian disease, and suddenly relieved by a critical and spontaneous discharge, have on suspicion of abortion lost character and even their lives. If the statements contradict each other, this fact of itself may reveal the truth.

There are at times difficulties in proving delivery at the full period of pregnancy, as is well known. The earlier in gestation, if the patient survive, the more these difficulties are enhanced. The occurrence of normal labor cannot be discovered with any certainty by a personal examination after eight days have elapsed,† those of an early abortion not even after only one or two.‡ The signs of delivery that are well marked at the full period, the general symptoms then obtaining, the size of the uterus, ascertained by the hand and sound, lacerations of the perineum and cervix, the lochia, the state of the breasts, abdomen, vagina, and vulva, all of little value except in conjunction with each other, are proportionately less defined as we go back, until near the commencement of pregnancy it becomes impossible to distinguish the abortion from severe hemorrhage or from menorrhagia, unless by detecting the impregnated ovum.

If the patient is dead, and too long time have not elapsed since the supposed occurrence, decision is often more easy; many facts in the case being generally known, and concealment being less possible. If the ovum, but partially detached, be still retained, the fact is self-evident; if it has been discharged, and concealed or lost, there will still be present the recent corpus luteum and other well-known signs, in proportion to the period of the pregnancy. Allowance, in this latter respect, must be made for the possibility of partial uterine contraction after death, as is sometimes known to occur at the full period;* the writer has seen it to a marked degree some time previous to the expiration of pregnancy, at a Cæsarean section after death from laryngitis, occurring in the Edinburgh Maternity Hospital.

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* Principles of Midwifery, p. 547.

† BAUDELOCQUE, tome i. p. 115; FODERE, ii. p. 17; MARC, Dict. de Méd., i. p. 228; MONTGOMERY, Signs of Pregnancy, p. 578; DEVERGIE, Méd. Légale, i. p. 244.

‡ RYAN, p. 267; TARDIEU, loc. cit.

2. *The Commission.*

Allowing the fact of the occurrence of an abortion to be proved or granted, it becomes necessary to discover its cause, whether accidental, natural, or intentional. Of this it will be found that the proofs are both positive and negative; drawn from the history of the case and from personal examination of the patient and the fœtus. The value of each of these elements is increased in proportion as it is compared with the other; but "this I wish most especially to have noted, that WHEREVER THERE IS A MISCARRIAGE, THERE IS ALWAYS PRESENT SOME ACTUAL, PERCEPTIBLE, AND OFTEN TANGIBLE CAUSE."†

The story of the patient may be to one effect, and that of other parties involved, to a very different one; if the first is corroborated by the second, it may again, as has already been remarked, present or not the likelihood of truth. If the habit of aborting at a certain period has existed, which of course cannot be alleged in a first pregnancy, if the patient has had sudden fright or grief, or is known to have been accidentally injured, the chances are to be considered in her favor, in the absence of proof to the contrary. The converse of this statement, however, must not be considered as always and necessarily true. Women have time and again suffered shipwreck, undergone torture, been thrown from a height, and otherwise severely injured, and yet have escaped miscarriage; while, on the other hand, they may repeatedly have aborted before, and yet passing safely their usually critical point, may without trouble go on to the full period. In still other cases there may exist local disease, pelvic or uterine, which, if left alone, would of itself occasion miscarriage.

The character of the abortion is not without its value, whether occurring suddenly and without apparent cause, or preceded by maternal disease or the signs of fœtal death.

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* CLARKE, Trans. of Soc. for Impr. of Med.-Chir. Knowledge, iii. p. 290; BAUDELOCQUE, i. p. 123, note; LEROUX, Traité des Pertes, Obs. xiii. p. 25 MONTGOMERY, loc. cit., p. 618.

† GARDNER, of New York, note to TYLER SMITH'S Lectures on Obstetrics, p. 203.

Examination of the mother, though proof that she has herself been injured is not necessary to establish the crime, may reveal local wounds and mutilations; or their absence, which, however, by no means goes to prove that violence may not have been inflicted; and, on the other hand, as in a case lately reported by the writer to the Boston Society for Medical Observation, traces of former violence in instrumental or other labors may remain, and to such an extent as to give to the touch every character of a recent and criminal interference.* The fœtus may show pre-existing and natural disease sufficient to account for the effect apparent, or may present the signs of direct and intentional interference. Recent scars of venesection on the arms and feet, and of leech-bites, especially on the upper and inner parts of the thighs, are suspicious in a patient who has aborted, unless they were evidently required by the state of her previous health. If signs of irritant injections into the vagina are present, they are ground for more than suspicion.

The instrument, where used, with which the operation has been performed, may sometimes be identified; though this is almost impossible unless by confession or direct testimony. The weapons resorted to by the unprofessional are various; knitting kneedles, pen handles, skewers, goose quills, pieces of whale-bone, and even curtain rods, are among the number. The finger alone, except where the uterus is prolapsed or can be depressed, and the os is very soft and patulous, is seldom if ever sufficient for the deed. If a physician be accused, it is important to notice with what instrument the crime is said to have been performed, if before witnesses, and whether it was introduced openly or under pretence of a digital examination.

The sensations of the patient at the time, are also in different cases unlike each other. In some instances nothing unusual is observed, in others a prick or probing, but in most an acute and tearing uterine pain, often followed by syncope or an hysterical attack. Slight but immediate hemorrhage generally occurs, save in professional cases, increased by compelled exercise, prolonged baths or ergot.

The time ensuing before the expulsion of the fœtus is an element not to be lost sight of. In 34 cases reported by Orfila, the minimum observed was 13½ hours, the maximum 6 days; in 36 cases by Tardieu, the minimum was 5 hours, the maximum 11 days. Of these last cases, however, 29 were within 4 days.

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* Am. Journ. of the Med. Sciences, April, 1859. In the instance referred to, the cervix had been deeply and extensively lacerated, forceps having been used in four previous labors; while depressions existing between the old cicatrices and half filled and ragged with clots, were decidedly suggestive of punctured wounds. The true nature of the case was rendered evident by its past history, and corroborated by the fact that the patient was a Catholic; the latter being a point to which I am inclined to attach much importance, for reasons already given.

It cannot be alleged in excuse that the sex of the child, so fatal in advanced pregnancy, has any influence in producing early abortion. In 293 premature still-births reported by Collins,* 146 were male and 147 female, bearing the proportion of 100 to 100. Nor can the plea of Drs. Gordon Smith, Good, Paris, and Copeland, that as a fœtus born before the seventh month has a slender chance of surviving, its murder should be viewed with leniency,† be allowed. Such arguments, that the perils and dangers to which the fœtus is naturally subjected should lessen the criminality of attempts at its destruction, are without foundation, and when advanced by physicians are utterly unworthy the profession.

3. *The Intent.*

We shall hereafter discuss the perpetrators of the crime, and the emergencies which can alone justify the induction of premature labor or obstetric abortion. We shall see that by none save medical men can such necessity ever be known; it is, therefore, apparent that the intent may frequently be judged from the relation of the parties implicated, and the excuses offered by them. It will also often appear from the other circumstances of the case. That the child was likely to be born a bastard, and to be chargeable to the reputed father, would be evidence to that effect; and proof of the clandestine manner in which the drugs were procured or administered would tend the same way.‡

On the part of the mother, bastardy also, the having denied the existence of pregnancy, concealed its expelled product, expressed an intention or desire to abort, made a known application for this purpose, visited a notorious abortionist, taken alleged specifics, or given similar advice to a friend, are all presumptive evidence; as are also the having neglected to send for aid when needed, or refused to take precautions or remedies when prescribed. In like manner, evidence of criminal intent would seem apparent, if drugs generally supposed abortive had been advised or given to a pregnant woman, or violence of any kind usually productive of the effect in question, even to tooth-drawing, had been hastily or unnecessarily used.

Here, as in many other cases where no malice is expressed or openly indicated, the law will imply it; if, for instance, a man wilfully poisons another, in such a deliberate act the law presumes malice, though no particular enmity can be proved.* Malice is not confined in its legal definition to ill-will toward one or more individual persons, but is intended to denote an action flowing from any wicked or corrupt motive, a thing done *malo animo,* where the fact has been attended with such circumstances as carry in them the plain indications of a heart regardless of social duty and fatally bent on mischief; and, therefore, it is implied from any deliberate or cruel act against another.† The rule is, that the implication of malice arises in every such case, and all the circumstances of accident, necessity, or infirmity are to be satisfactorily established by the party charged, unless they arise out of the evidence and attending circumstances; if they do not, there is nothing to rebut the natural presumption of malice. This rule is founded on the plain and obvious principle that a person must be presumed to intend to do that which he voluntarily and wilfully does in fact do, and that he must intend all the natural, probable, and usual consequences of his own act.‡

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* Practical Treatise, p. 275.

† RYAN, Med. Jurisprudence, p. 282.

‡ ROSCOE, Law of Evidence, 242.

The standing in society of the accused, unless notoriously bad, should of course be allowed to weigh but little; the less the likelihood of the crime, the greater, from example and previous education, its guilt.

If violent purging or vomiting have been resorted to without any apparent reason, or to a greater extent than ordinarily prescribed or required; or if leeches have been applied to the thighs, to the number of an hundred or more, as instanced by Tardieu, or the like, there is certainly ground for strong suspicion. And here it is that the criminal liability of careless or ignorant physicians becomes evident. In cases such as we have referred to, it would be very difficult for a successful defence to be offered, providing the pregnancy had been suspected by those not implicated, were the statutes on abortion properly drawn and enforced.

It has been ruled, and very justly, that attempts at the crime, though unsuccessful; or effective, yet the ovum retained as mole, hydatids, skeleton, mummy, or putrilage; and whether the woman be pregnant or not, and if pregnant, whether the child be alive, dead, or abnormally developed or degenerated, should be amenable as though fully consummated.§ We have seen the frequent difficulty in proving fœtal life; the attempt at its destruction shows the belief in its existence, and the intent. The proofs will here of course be of a different nature. The signs of delivery will be absent, and all evidence from the product of conception, unless the mother's death ensue; in which event, as in the other fatal cases we have considered, and on the principle just laid down, procedure might be had on the charge either of abortion or homicide ; but it must not be forgotten, as we early pointed out, that immediate death from the shock may occur, and no lesion of any kind be found. The patient or parties interested are proved by the attempt to have supposed pregnancy existing, and to have behaved as though this were the fact.

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* ARCHBOLD, Crim. Pleading, 491; 1 HALE, 455.

† DAVIS, Crim. Justice, 482.

‡ Ibid., 483.

§ Reg. *v.* Haynes; Reg. *v.* Goodall; Rex *v.* Phillips.

The age of the patient is not of consequence ; nor is that of the fœtus, save as corresponding with the alleged period of pregnancy, in case any doubt exist as to its own identity or that of the mother, and as bearing on the statement we have already attempted to prove, that criminal abortion is comparatively rare after the period of quickening, and, therefore, on the probability of intent. The number of the pregnancy is also wholly immaterial, different as are the causes alleged for its criminal induction, and equally liable in youth and age, as women seem to be, to accident or placental disease. Whitehead and West are of opinion that abortion naturally resulting is most common after the sixth pregnancy,* but the point needs further investigation.

Among the proofs of intent must be included, as we have seen, the excuses offered by the accused or suspected party, and the means resorted to for consummation. These we now proceed to examine.

It will be evident that the plea of necessity can be made by none but a medical man. We shall show that the cases where abortion is legitimated by the rules of science are extremely few, and that for safety's sake their applicability should in no instance be allowed to rest upon a single opinion.† For all others beside the physician there can be no allowable excuse except, in the mother's case, insanity; which, however common in the true puerperal state, and often no doubt then showing itself by infanticide, has in early pregnancy, and to any extent, still to be observed. Other pleas as offered by the mother, ignorance of pregnancy or of fœtal life, duress, personal health or that of her family, accident, carelessness, fear of child-bed, malpractice on part of the attendant, we have already considered at sufficient length. It is sometimes effected in hatred of the husband or in jealousy, sometimes for concealment of shame ; excuses of little more value than those of extravagance or fashion. Constitutional predisposition can hardly be asserted, unless the miscarriage have been preceded by others; very many ineffectual attempts are on record, although the existence of such predisposition was evident. It will often be alleged that the measures instituted were to prevent instead of to effect the miscarriage, and that this has resulted in consequence merely of an excess of good-will; the sophistry is generally apparent.

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* Med. Times and Gazette, Jan., 1856, p. 611.

† "This operation must not on any account be undertaken without the sanction, and in the presence, of another practitioner."—Clay, Hand-book of Obstetric Surgery, p. 13.

The means resorted to are for two purposes: on the one hand, to prepare the patient for the abortion and preliminarily to lessen her danger, or to conceal the character of those, on the other hand, which really occasion it, and for this end used prior or subsequently to them. We may yet take occasion to consider these several agents in some detail; it remains only to remark that their use in any given case must be compared with what was then actually needed, or would have been required had the abortion been justifiable and necessary.

Certain drugs, ergot and savin for instance, the class of so-called abortives, popularly considered specific, are always suggestive of evil intent. They would not be used, were abortion necessary, by a well-informed practitioner, caring for the life of the parent or fœtus. The same is true, though of course to a more limited extent, of all over-drugging, over-manipulation, or over-exertion by a pregnant woman, by whomsoever advised or performed. In every instance it is necessary to compare the cause alleged with the effects observed, and to judge of it from these. Where direct operative manœuvres are suspected or charged, the processes or instruments, the results, immediate and consecutive as well as remote, the period elapsing before their occurrence, must all be taken into careful consideration.

But, on the other hand, it is immaterial what was the agent, and whether or not it would produce abortion, if it was believed capable of this effect, and employed or administered with that intent. If the person charged knew that the woman was with child, and the probable effect of the agent administered, this is good presumptive evidence that the intent was to produce the miscarriage, and where the effect of abortion is actually thus produced, it will materially aid the presumption of such intent.*

It was stated early in this inquiry that a difference existed between the methods of investigation, as regards the examination of the fœtus, proper in abortion and infanticide. The reason of this has been pointed out by Tardieu.† In the latter case, the whole matter turning upon the questions whether the child was born living or dead, and in which of these states it was injured, it becomes necessary to prove one or the other of the alternatives, but in abortion they are intrinsically of no importance whatever. The only points then to be decided are, was the birth premature, and if so, was it intentional, and if so, was it absolutely essential and to save either maternal or fœtal life. Except as bearing on these questions, therefore, it is of no consequence whether wounds were inflicted, whether the lungs had been inflated, whether the fœtus was viable, or even whether it was ever discovered.

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* 1 GABBETT, Cr. Law, 523.

† Loc. cit.

In their place, however, these points are each important, but only as bearing on the main facts to be determined. In a case, for instance, as that related by Ollivier d'Angers, where the fœtus, though very immature, lives several hours after its expulsion, this fact alone will preclude the idea of a slow and progressively acting cause like most forms of abortive disease, and will point to some direct interference, by means suddenly terminating the pregnancy without injuring the fœtus.

And so in other cases, especially of sudden maternal death, it is of importance to ascertain as nearly as possible the period at which death of the fœtus took place. If the two were coincident, the deduction might be other than if the latter were proved to have preceded the former by several days. The differences observed between putrefaction and decomposition *in utero* and in the open air must not be lost sight of. In the one case, according to Orfila, Devergie and Martin, Moreau, P. Dubois, Danyau, Cazeaux, Tardieu, and my own experience, a uniform and characteristic reddish-brown hue obtains in proportion to the time of retention after death, varied perhaps by the action of the amniotic fluid;* the fœtus wrinkles, dries, and becomes mummified, unless in earliest pregnancy, when it generally resolves itself into a gelatinous mass.

If the cervix, the portion of the uterus most frequently wounded, is found punctured or lacerated, while the ovum is still retained, there is reason for suspicion; if the membranes are torn and extensively detached, while the cervix is but little dilated, such is increased; and it is made almost a certainty, if with the latter condition, nothing remain of the ovum in the uterine cavity but lacerated fragments. Here the abortion would probably not merely have been intentionally induced, but by the direct introduction and agency of instruments.

Wounds of the fœtus are much rarer than those of the mother, and are usually simple pricks of the skin marked by blackish coagula or extravasations; which, if upon the skull and unless care be used, are liable to be simulated by clots casually adhering to the hair or scalp. If the wound be deeper, its course may be traced by dissection. Its situation varies; Devergie thinking it always on the back and buttocks, while Tardieu, with some warmth, would restrict its location to the top of the cranium. This difference is easily explained by variations in the time of pregnancy, and in consequence partly, as may also depend on its life or death, in the presentation of the child. The rarity of their occurrence, though denied by

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* CHEVALIER and DEVERGIE, Ann. d'Hyg., 1856, p. 157.

Taylor* and other medical jurists, might, however, be expected, and is readily accounted for; the instruments used by ignorant persons seldom entering the os, however severely wounding the cervix, and where they do enter, usually only piercing the membranes; against which, except toward the end of pregnancy, in a deficiency of liquor amnii, or in labor, the fœtus can hardly be said to forcibly press.

4. *The Identity of the Party Accused.*

Most of the points here involved having already been incidentally considered, we will not repeat them. The circumstances and history of the case, the relative correspondence of different testimony, the allegations of the accused, will all bear directly upon the question at issue.

In trials for abortion, of all others, the medical witness and the advocate should bear in mind their liability to error; the juror and the judge the fact that innocent persons are at times wrongly accused, often by the true criminals themselves.

In defence, it must either be pleaded that the alleged abortion did not occur, that it was accidental or natural, that it was necessitated, or that it was induced by another than the individual charged.

The first of these pleas is seldom offered except in the earliest months of pregnancy, and would be invalid if an attempt at the abortion could be proved. In default of this, however, where the ovum has been lost, or has passed unnoticed, the fact that the sanguineous effusion was hemorrhagic and attended with clots, would, in the absence of any uterine disease sufficient to account for this, be so far presumptive evidence; to be corroborated or not by the history of the case. Moles and hydatids are now generally allowed to be mere transformations of the product of conception; their premature discharge, therefore, equally an abortion.

In answer to the second plea, the importance of several points must be borne in mind. It has been well put by Tardieu that it is wrong to commence, as advised by most authorities on the subject, by enumerating all the natural and accidental causes liable to have produced the abortion. On the contrary, the signs and proofs of criminal violence should first be sought, and these compared with the allegations of witnesses and the possibility of a natural or accidental origin. The traces of falls, contusions, and wounds must be found, not believed on mere allegation; coincidences must be guarded against, equally with untruth.

We have already laid down rules here available; that the state of the fœtus often affords proof of the cause of its expulsion, this being slow and natural, and depending on disease and predisposition, or not; that in flagrant malpractice, the use of alleged specifics, or of measures likely to produce direct miscarriage, or otherwise absolutely counter-indicated by the general health and constitution of the patient, a contradiction exists to the plea offered, in itself strong presumptive evidence of criminal intent; and that in certain cases this evidence becomes positive, as where, for instance, a sponge found or proved to have been inserted into the os uteri as a dilating tent, is alleged to have been intended as a mere pessary and placed in the vagina.

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* Med. Jurisp.; Griffith's ed., p. 472, Hartshorne's ed., p. 378.

If the accused be a physician, presumed as he should be, acquainted with the great principles of practice, his only plea can be, where the means used were unjustifiable and proved such, and where the pregnancy was known to others, that he was ignorant of its existence. Liable as the profession are at any time to this charge, and easy as it is in almost every case, especially of instrumental procedure, for us to take such preliminary measures as would be likely to settle the question of the existence of pregnancy, or to request the presence of a witness to our act, it is unjust to ourselves and to each other to omit these precautions.

But if, on the other hand, the charge be utterly unfounded, it is probable, as I have already remarked, that contradictions in the testimony or the alleged facts could always be shown to exist, and the perjury thus exposed. It would be self-evident, were the accused proved to have been first consulted after the abortion had terminated, though not if it had only commenced.

V. ITS PERPETRATORS.

It is interesting, and at the same time of judicial importance to ascertain, so far as possible, the standing and character of the perpetrators of this crime.

In the first place, French statistics on the large scale show that the number of criminals, principals and accomplices, in that country at least, is in large excess to the instances of the crime, there having been in 183 trials, from 1826 to 1853, not merely 417 parties accused, but 213 convicted; and that in 75 per cent. of the prosecutions and convictions occurring, where the abortion is not induced by the mother herself, the offenders are women.* With us the same statement is, without doubt, equally true.

The part played by the mother, herself so often a victim, is almost always that of a principal, yet as laws now stand, she can scarcely ever be reached. The cases where she is under duress, by threat of other personal violence from her husband or seducer, and thus compelled to submit to abortion, or where the act is performed by his direction but without her knowledge, are so rare, that in a general statement they may be assumed not to exist. If the mother does not herself induce the abortion, she seeks it, or aids it, or consents to it, and is, therefore, whether ever seeming justified or not, fully accountable as a principal. We have already seen the position these mothers hold in the community, high as well as low, rich as well as poor, intelligent and educated as well as ignorant, professedly religious as well as of easy belief, not single alone, but married.

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* TARDIEU, loc. cit., 1856, p. 124.

We turn now to their partners in guilt, more criminal than themselves; for whatever excuse the latter may suppose themselves to possess, the former can have none.

The accomplices in criminal abortion are of several classes, distinguishable in some respects from each other, especially by the relative frequency with which their part is played. They are:

Of women, I.—Friends and acquaintance.
II.—Nurses.
III.—Midwives and female physicians.
Of men, IV.—Husbands.
V.—Quacks and professed abortionists.
VI.—Druggists.
VII.—And worst of all, though fortunately extremely rare, physicians in regular standing.

In many cases, such at least is judged by the writer from his own observation, the abortion is not merely advised, but induced by some female *friend*, especially by one who has herself undergone, in her own person, the crime; perhaps without appreciable evil result,—but this is not necessarily the case, for even where such result is present and plainly in consequence, its connection with the true cause is frequently unsuspected or disbelieved. It has been said that misery loves companionship; this is nowhere more manifest than in the histories of criminal abortion. In more than one instance, from my own experience, has a lady of acknowledged respectability, who had herself suffered abortion, induced it upon several of her friends, thus perhaps endeavoring to persuade an uneasy conscience that by making an act common, it becomes right. Such ladies boast to each other of the impunity with which they have aborted, as they do of their expenditures, of their dress, of their success in society. There is a fashion in this, as in all other female customs, good and bad. The wretch whose account with the Almighty is heaviest with guilt, too often becomes a heroine. So true is the case, that the woman who dares at the present day publicly or privately to acknowledge it the holiest duty of her sex to bring forth living children, "that first, highest, and in earlier times almost universal lot,"* is worthy, and should receive, the highest admiration and praise.

The ease with which an accomplice is procured, provided the idea originates with the victim herself, and is not suggested by another, is found among *nurses* to be greatly increased. We separate them as a class from midwives and female physicians, with whom, though in this country not generally acknowledged or thought identical, they not unfrequently aim to be confounded. They are usually, and rightly, thought more familiar with the laws of health and disease, than the generality of their sex; they are, if doing their duty in his sight, seen to be treated with respect by the physician; they are commonly of mature age, supposed discreet, wise, and to keep their own counsel; they have had opportunities of gaining the confidence of the mother; many of them have themselves borne families. They are therefore approached with less hesitation, and are not always found proof against an offered fee.

What we have said of nurses applies with increased pertinency to *female physicians* and *midwives*. These make it their claim, in rivalry of the male physician, that their schools and their practice are, like his, founded on those abroad, especially of Paris. Tardieu shows, in a total of 32 cases occurring in that city and collected by himself, that in 21—no less than 66 per cent., or two-thirds of the whole number reported—the crime was perpetrated by midwives.† This class frequently cause abortion openly and without disguise. They claim a right to use instruments, and to decide on the necessity and consequent justifiability of any operation they may perform. Where they establish private hospitals, professedly for lying-in women or not, their chances, previously great, of committing this crime and infanticide with impunity, become more than doubled. It has been found necessary in France for the police to exercise rigid surveillance over these establishments. In one instance, occurring at Grenoble, it was proved that within three years there had happened in the house thirty-one still-births at the full time, or deaths just after birth, and that the abortions and miscarriages had been almost innumerable.‡ In another case, to conceal the evidence of these truly *corpora delicti*, and to evade the law against secret burials, the midwife had established an understanding and a current account with an undertaker, who was accustomed to smuggle her fœtuses into his coffins, by the side of the corpses confided to him for burial. In still other cases, the victims are kept on hand, preserved in jars; private collections vieing in extent with those of legalized obstetric museums.

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* A Woman's Thoughts about Women. By the author of "John Halifax, Gentleman." 1858, p. 14.

† Loc. cit.

‡ Ibid.

By these remarks we would not be supposed endeavoring to excite prejudice against female physicians and midwives, as such, or advocating their suppression. We are now merely considering this crime of abortion, in relation to which they are peculiarly and unfortunately situated. At present everything favors their committing the crime; their relations to women at large, their immunities in practice, the profit of this trade, the difficulty, especially from the fact that they are women, of insuring their conviction. Let better laws be enforced, and let public opinion be enlightened concerning the guilt of abortion, and the influence for evil of this class of offenders will in great measure be done away with.

Of male abortionists we have less to say. Their number is fewer abroad, bearing the proportion, as we have seen, of but one to every four, and their liability of being applied to, or consulted, is slight in comparison.

Husbands, though generally knowing to the offence of their wives, and often counselling it, probably but seldom attempt its commission themselves; yet instances of this do undoubtedly occur. In but a sixteenth of the cases reported by Tardieu, was any compulsory violence exerted over women by their husbands.

Druggists and *professed abortionists* are accountable for the greater number of the cases of the crime attributable to men. The latter class, though proportionally rare, yet abound in every city, and take all means of making themselves known. A knowledge of their alleged specifics, against the use of which, "at certain times," the public are "earnestly cautioned," etc. etc., is brought home to all our women, no matter how purely minded, and despite every care to the contrary, through the medium of the daily press; few papers, however professedly respectable or religious, proving able to refuse the bribe.

Druggists, as a class, are little more than the confessed agents of these villains. Even should they not directly recommend their nostrums, as, however, is frequently the case, they almost universally keep them on sale, labelled to catch the eye, and placarded on their walls. Like the publishers and vendors of obscene literature, they conceive they are not to blame for supplying a public demand, however much they themselves may have done toward its creation.

And in this connection we must again allude to the guilt of the public press, which has proved itself so constantly and so dangerously an accessory to the crime. It would be thought that in Massachusetts, for instance, a statute like the following might do something to check this license:*

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* Mass. Laws of 1847, chap. 83.

"Every person who shall knowingly advertise, print, publish, distribute, or circulate, or knowingly cause to be advertised, printed, published, distributed, or circulated, any pamphlet, printed paper, book, newspaper, notice, advertisement, or reference, containing words or language, giving or conveying any notice, hint, or reference to any person, or to the name of any person, real or fictitious, from whom, or to any place, house, shop, or office where any poison, drug, mixture, preparation, medicine or noxious thing, or any instrument or means whatever, or any advice, directions, information, or knowledge, may be obtained for the purpose of causing or procuring the miscarriage of any woman pregnant with child, shall be punished," etc. etc.*

The above statute, however, such is the public sentiment on this point, is not enforced, or is daily evaded. The press, if it choose, may almost annihilate the crime; it now openly encourages it.

It has been often alleged, and oftener supposed, that *physicians in good standing* not unfrequently and without lawful justification, induce criminal abortion. This statement, whatever exceptional cases may exist, is wickedly false. The pledge against abortion, to the observance of which Hippocrates compelled his followers by oath,† has ever been considered binding, even more strongly of late centuries. The crime is recognized as such in almost every code of medical ethics; its known commission has always been followed by ignominious expulsion from medical fellowships and fraternity. If this direct penalty be at any time escaped, it is only through lack of decisive proof, bare suspicion even of the crime insuring an actual sundering of all existing professional friendships and ties; a loss that subsequent proof of innocence could hardly restore. Such is the unanimous feeling of the profession; to its credit be it said, that with but a single exception,‡ and this to his eternal disgrace, its writers are all agreed, abstractly considering the subject, on the sanctity of fœtal life. The instances where physicians in good standing are guilty of the crime, are of rare occurrence; the error that has prevailed on this point, originating from the self-assumed titles of notorious quacks and knaves. But no condemnation can be too strong for the physician who has thus forgotten his honor; who has used to destroy life, that sacred knowledge by which he was pledged to preserve it.

The criminal abuses likely to arise from the procurement of justifiable abortion by medical men, are so numerous, their own liability to be thought by the public criminally careless of fœtal life, or skeptical concerning its existence, is so great, that the subject is worthy special consideration. This I shall now devote to it.

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* "By imprisonment in the State prison, house of correction, or common jail, not more than three years, or by fine not exceeding one thousand dollars."

† Opera omnia. Ed. 1655, i., p. 643.

‡ JÖRG of Leipsic, who speaks of the human fœtus as "only a higher species of intestinal worm, not endowed with a human soul, nor entitled to human attributes."

(TO BE CONTINUED.)

ART. II.—*The Present State of Microscopical Science, Medically Considered.* By JOHN H. PACKARD, M.D., of Philadelphia.

ALTHOUGH nearly two centuries have elapsed since the publication of the first really scientific observations made with magnifying glasses, the full value of this method of research has been developed only within the last twenty-five years. Both as an optical instrument, and in its mechanical accessories, the compound microscope seems now to be hardly susceptible of further improvement. Of all the means at our command for extending our knowledge of the physical world, there is, perhaps, none that opens a wider or more attractive field of inquiry, since it discovers to the eye a new realm of life, animal and vegetable. Interesting as these minute organisms are in themselves, they are doubly so in a physiological point of view; for in them the laws of vitality are set forth under the simplest conditions. Moreover, the intimate structure of the human frame, in health and disease, can now be thoroughly investigated; so that in regard to anatomy, physiology and pathology, which together constitute the true foundation of philosophical medicine and surgery, the student at the present day enjoys advantages not granted to his predecessors.

The enthusiasm of the votaries of a new science is apt to lead them into claiming for it greater importance than is sustained by subsequent experience; and when its novelty wears off, and it is found not to supersede other and older methods of investigation, it is in danger of unmerited mistrust and neglect. There may be some source of fallacy in the subject of study; inexperienced, inaccurate or prejudiced observers may commit palpable errors; or too much may be expected of the means employed; all which circumstances must be taken into account in estimating the worth of any branch of inquiry.

The object of the present paper is to discuss the value of the microscope as a means of medical research; to examine into the reliability of its testimony, and the extent of its range. For this purpose, it is necessary to review what has been accomplished by its aid, and to survey the still debatable ground.

Let it be distinctly understood in the first place, that the microscope cannot set aside other sources of information. Its powers are confined to the recognition of certain qualities of matter, unappreciable by the naked eye; in other words, it simply aids the sight. Hence, just as the grosser appearances either of healthy or diseased tissues are without meaning, unless subjected to careful analysis and comparison, just as the closest reasoning must be employed in their study, so also with the characters revealed by the microscope. In matters of sight alone, the eye, whether assisted or not, must be depended upon; but when there arise questions of interpretation, when the value of differential signs is to be decided, or the meaning of a fact to be explained, other evidence becomes necessary. Microscopy, therefore, like other sciences, comprises two essential elements; one being the mere collection of facts or observations, and the other the grouping of these and the deduction of laws from them. All men are, to a greater or less extent, observers; very few are philosophers. The mere addition of another optical instrument to the one supplied by nature, cannot do away with the necessity of careful and discriminating thought; it simply increases the facilities for gathering material. Should the medical profession henceforth devote themselves solely to microscopy, it would be as if all other branches of industry were abandoned for the mere digging of gold.

To form an idea of the influence actually exerted by the revelations of the microscope upon the various departments of medicine, it is only requisite to glance over the publications of the first quarter of this century, and then to take up those of the present day; the difference cannot but be manifest.

How, then, has this change been brought about? Nothing has contributed more to its production, to the increase in accuracy of anatomical description, and to the clearer understanding of the processes observable in health and disease, than the discovery of the *cell*, as the primary organic form. And since this discovery is the basis of the fundamental law of structure, with which, as microscopists, we are particularly concerned, it will be well to take a brief survey of the conditions and general bearings of this law, before entering upon the subject of its special applications.

The limit between the organic and the inorganic kingdoms is now clearly drawn. Crystallization, the faint shadow of the living *form*, stands near the line, but below it. *Vitality, past or present, and a definite compound structure*, belong to all true organisms. The microscope cannot reveal the nature of that Promethean fire, which the Creator of all dispenses at his will; but it lays before us the material envelope, the outward and visible sign of that mysterious endowment. It shows us the developmental changes which result in the perfect tissues, and the successive steps by which those tissues are again prepared for resolution into their original elements, as well as the alterations in them which constitute disease.

With the physiological question of a vital force, as distinct from all other known agencies, we are not here concerned; it may be that the exciting cause of organization is a special and undefinable influence, or a mere combination of certain electrical, chemical and mechanical conditions; but we find that an organizable material is indispensable, and we find also, that wherever organic forms appear, they do so secondarily; in other words, that there is no such thing as spontaneous generation. Carbon, hydrogen, oxygen and nitrogen, with heat, moisture and electricity, are not the sole requisites for the development of an organic form; the assimilative power of a previously existing *germ* is absolutely essential.

Under the influence of such a germ, the organizable material may acquire either one of several forms, differing only in appearance. It may become a cell, a mere nucleus, a fibre, or a tube, or it may be utilized without taking on any of these characters, as in the "matrix" of cartilage, or the "basement-membrane" of epithelial layers. What the mutual relations of these forms may be, as rudimental, transitional, completed or retrograde stages of the same portion of matter, will also come under consideration in speaking of the development of the various tissues in which they occur.

Connected, however, with the very idea of the typical cell, are the questions of the function and date of its nucleus. The typical cell, be it understood, is composed of a wall, inclosing the cell-contents, of which the nucleus and its nucleolus form a part; and the point now at issue is, whether the nucleus appears first, and the cell is developed around it, or, the cell being completed, a portion of its contents is arranged so as to form the nucleus. Several facts go to favor the idea embodied in the first-named view, that the nucleus is the true germ of each cell; thus, in all rapidly-growing tissues, free nuclei are apt to abound, and the nuclei contained within cell-walls are apt to be very large; in the cells of tissues which need constant renewal, as in muscle, the nuclei do not disappear, as they often do in those which have attained a permanent character; and in cells which multiply by division, such as those of cartilage, each segment carries with it a portion of the nucleus.

One other theory of cell-formation might be contended for, viz., that the origin of the cell and that of its contained nucleus are simultaneous; the cell then undergoing a further process of development, while the nucleus remains stationary. But if the cell and its nucleus are called into being at the same time, the former is often imperceptible, while the latter seems perfected; so that, for practical purposes, the nucleus is still the prime agent in the growth of the cell.

As to the nucleolus, its significance is not appreciable; it is not by any means so constant as the nucleus, although its presence and vesicular appearance have been proposed as diagnostic signs of malignancy, by some pathologists.

Schwann's description of the formation of the cell around the nucleus, is better than any since given. (*Mikroskopische Untersuchungen*, Berlin, 1839.) "On the outer surface of the nucleus there is deposited a layer of matter separated from the surrounding blastema. This layer is not at first well defined, externally, but becomes so by the addition of fresh molecules. The layer is of variable thickness, and may be either homogeneous or granular. No distinction exists, as yet, between the wall of the cell and its cavity. The deposition of new particles of matter between the former, still continues; so that the whole layer, if it is thin, or its outer portion, if it is thick, at length constitutes a membrane. The commencement of this consolidation of the outer part of the layer into a membrane, may be observable soon after its external limit becomes well-defined; but, usually, the membrane is not to be clearly made out until later, while it becomes thicker and more sharply defined within; in many cells no distinct membrane exists, but they seem solid; only their outer part seems to be more compact than the rest.

"The cell-wall, once consolidated, grows by the continual deposit of new molecules between those making it up, and also by a process of intussusception; it thus becomes separated from the nucleus. The interval between the two is, at the same time, filled with fluid, which is the cell-contents."

Now, in this doctrine of a cell, with its formation and subsequent developments, we have the ultimate analysis of anatomy. Each cell, in any living organism, presents the phenomena of life; birth, growth, assimilation, reproduction and death, occurring to each, in due order and time. A certain aggregation of various forms of cells constitutes an animal or a plant; the aggregation of their functions constitutes its physiology, and the partial derangement of their functions, its pathology.

Here, then, we undoubtedly have a key to the laws of structure; from the humblest unicellular plant to the complicated organism of man, the *cell* is the form under which life manifests itself. Life without structure is an inconceivable idea to the human mind, with its present capacities, and therefore it never enters into our practical calculations. But if structure and life are inseparable, if, moreover, there can be traced certain relations between the characters of a cell and its function or life-action, then the cell-doctrine has a wide and most important application. This idea will be developed further as we advance in our subject; but let it be here remarked, that to the microscope is due the recognition of the cell, and that by the microscope alone can the cell be studied.

The matter of a classification of ultimate structural elements is at present undecided, mainly because it is still a vexed question whether or not pathological and normal forms are essentially identical. That such a classification will eventually be made, we firmly believe; until it is made, and all known structures are grouped under definite heads, microscopy cannot claim rank with other branches of natural science. Nor is the value of minute anatomy compromised by this statement, since its study has been so recently commenced, and its range is so wide, that its resources are as yet undeveloped.

As medical men, our main subject of inquiry concerns the difference between health and disease, in order that we may preserve the former condition or arrest the latter. And here the idea may be suggested, that, perhaps, abnormal phenomena are more intimately connected with structural changes than is generally supposed. For instance, in diarrhœa, dependent upon a so-called "weakness" of the mucous membrane of the intestine, the epithelial lining of the tube may not improbably be altered in its character, either as a cause or as an effect of the morbid state. The "irritations" to which so many forms of suffering are ascribed, may be due to or productive of changes in texture, appreciable to the aided sight. In fact, the line of division between functional and organic disease is not, by any means, distinctly drawn; possibly, no such line exists.

By thus extending the term "organic," so as to include in it all departures from the normal type of the state or function of cells, we define more clearly the limit between health and disease, in theory at least. If the connection between the material state of a tissue and its function is not inseparable, then there may be such a phenomenon as purely functional disease; if otherwise, this term is meaningless.

In other words, we would suggest that the working of the entire machinery composing the living organism is dependent for its accuracy upon that of the individual tissues by which it is made up. And however temporary any derangement may be, however superficially it may seem to lie, it appears a reasonable supposition that it is the result of abnormity in material structure. Take the case of functional disease of the heart; can any one assert that there is no such thing as an abnormal condition of the cells composing the brain or spinal cord, or of the blood, manifested just in this way? Again, in functional disease of the brain or spinal cord; is there any absurdity in the idea that it denotes some organic alteration, temporary or permanent, as the case may be, in the structural state of some other part?

Such a theory cannot include all mental disorders; we do not carry our materialism into the domain of psychology. So far as bodily phenomena are concerned, directly or indirectly, as causes or as effects, we would explain them upon the principle now stated. And if this theory be correct, then the cell-pathology proposed by Virchow, as the true combination of solidism and humoralism, finds a rational basis.

One other general question may be mentioned here, without anticipating its future discussion in connection with special points. An opinion is held by many pathologists that all pathological forms are either retrogressions, transformations, or repetitions of typical, physiological structures. The decision of this question, as has been already stated, is essential to the classification of ultimate structural elements, since it involves the position to be assigned to very important growths. If there does not exist any type of cell-formation different from the physiological, then the so-called malignant deposits, for instance, must be conformable to the latter. But if so, they must either depend for their malignancy upon some condition extrinsic to their microscopic elements—a supposition fatal to cell-pathology—or a power must be conceived to be inherent in certain cells, of acquiring a new function and signification, without losing their identity. In the former case, the local manifestation is a mere accident, remarkably constant it must be confessed,—the cell does nothing; in the latter, the cell is possessed with a sort of evil spirit, and is transformed from a quiet and useful member of the body corporate, into a most inveterate disturber.

That the local deposit is not the sum of the morbid condition, is evident from the general symptoms accompanying it; that the constitutional vitiation, the diathesis, is not all, is shown by the constancy of its topical manifestation. The precise connection between the two we cannot define; but it seems philosophical to suppose that they have the same origin, and the same essential nature. It must, however, be conceded that the constitutional affection is *sui generis;* and why it should be denied that the local deposit is likewise peculiar, does not appear.

Having now taken a brief survey of the great truth revealed by the microscope,—the existence and universality of the organic cell,—and having discussed in general terms the bearing of this recognized fact upon physiology and pathology, let us proceed to the more special examination of our subject.

We have to deal with (1) *minute anatomy;* (2) *progressive changes;* (3) *processes.* Each of these, again, has reference (1) to the state of *health;* (2) to that of *disease.*

Our researches must, therefore, have a sixfold character; and they can only be made practically useful by bringing the several divisions now laid down into mutual connection; in other words, by looking at them successively in regard to each tissue. The following arrangement of our subject will, therefore, be adopted:—I. The special application of the cell-doctrine, or the discussion of the microscopic elements of healthy tissues generally. II. The individual tissues, including their normal anatomy, their physiological functions as connected with this, and their pathological changes. III. Such processes as are open to microscopical study, and yet involve several textures. IV. Such structural elements as constitute morbid deposits. V. Matters secreted and excreted. VI. Animal and vegetable parasites.

I. *The microscopic elements of the healthy tissues generally*, have been alluded to in connection with their typical form; and we have now merely to discuss their mutual relations, and the practical importance of these.

It must be borne in mind that matter, whether organized or not, is constantly acted on by physical forces; and that although these may not fully explain the phenomena met with, they must be taken into account. At all events, they have a modifying influence; and it is more philosophical to make the best use of what we know certainly, than to appeal to the vague and indefinite. Thus, it may be stated that the primordial organic form, the cell, is guided in the alterations it undergoes by the mechanical pressure it sustains; that its spherical shape is the result of an equilibrium between the cohesive and repulsive powers of its particles; and that when it becomes elongated, polygonal, or constricted, the change is due to those particles moving in the direction of least resistance. An increase of the cell-contents by endosmosis of liquid from without must of course render the pressure from within outward more powerful in every direction, and therefore can only distend the sphere equally; their diminution by exosmosis will, on the contrary, favor the action of external forces. In regard to some points, this theory is sufficient; thus the flattened shape of the superficial layer of epidermic cells is fully accounted for in this way. But to explain the development of some other tissues, as for instance striated muscular fibre, some less purely mechanical theory is requisite. Hence, although this law is never superseded, it will not answer as the general principle of progressive change. The precise nature of the force originating and guiding this phenomenon is beyond the province of sight, and the microscope can therefore reveal its effects only.

Assuming then the fact of some immaterial agency, we find that the tissues are by its influence developed from an ovule, which "*possesses the nature and constitution of a simple cell.*"* By its segmentation this becomes a mass of cells, and these, by their own changes and by their assimilative power over the organizable material, build up the textures of the animal frame. In the whole course of this process the nucleus (primarily the *germinal vesicle*) appears to exert an indispensable influence; it may be called the medium through which the immaterial agent manifests itself.

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* Kölliker's Microscopical Anatomy, Am. ed., p. 642.

But the very performance of any function by a cell involves an expenditure of its powers of life; hence the constant presence of effete matters in the organism; and as the organizable matter consisted of certain chemical elements in combination, so, having completed its term of life, it is resolvable again into the same chemical elements. This resolution may occur within the body, or the cells may be first cast off by a process of excretion; in the former case the chemical elements may be discharged under very different conditions of combination from those which they presented at the outset.

We find, therefore, within the organism, as soon as the formative process is so far advanced that functions are assignable to its several portions, matter in very various states. Nutritive material, tissues at different stages toward completion, and the products of life-action, must be present. The first of these is simply the liquor sanguinis, or plasma; the third includes secreted and excreted matters. And among the matters excreted we find some, such as carbonic acid and water, which are ordinary chemical compounds; others, such as the coloring matters of the bile, which are derivable only from the animal economy; and lastly, worn-out structural elements.

But it is with the second state of matter that we have now to deal—with the nuclei, cells, fibres, tubes, and the so-called *structureless membranes*, which go to make up the body.

Free *nuclei* exist physiologically only in the chyle at an early stage, and here they soon surround themselves with a wall, forming the chyle-corpuscle or cell. The idea that the red blood-corpuscle is a free nucleus is no longer tenable since the publication of Mr. Wharton Jones's researches. In morbid growths, nuclei sometimes elongate into fibres; but this probably never occurs as a healthy process.

Cells, as such, are found floating in the blood, chyle, and lymph; they lie definitely arranged upon mucous and serous surfaces, and in cartilage and bone; they constitute the contractile tissues, and the nerve-centres; and the accidental injuries to which the animal body is subject are repaired by means of them. In this latter process, an analogy with the original formation of the living being is clearly traceable.

Fibres are met with in connective tissue, in tendons, ligaments, the periosteum and perichondrium, in the dura mater, and in the sheaths of the nerves, in the sclerotic coat of the eye, the cornea, the capsule of the lens, the skin, and the matrix of certain cartilages. They are never primary forms, but are derived either from cells or from nucleated blastema; in the latter case it is not improbable that there is really a cell-structure present, but less evident than usual.

Tubes occur as elementary forms in the sheaths of nerve-fibrils; they are also found, as the result of the coalescence of cells, in the capillary networks of the lymphatic and blood-vessel systems.

Structureless or *basement-membranes* are expansions of organized material, which, as their name implies, present no indication of either of the foregoing types of structure; their importance has been, perhaps, too little insisted upon. Their extent is very great; they underlie all the mucous and serous epithelia, separating the proper cells from the connective tissue which sustains and binds together the vessels so as to constitute the submucous and subserous areolar textures.

Now it seems as if there were an evident analogy, if not identity, subsisting between the cell-wall, the fibre, the tube, and the *basement*-membrane. They are all, strictly speaking, equally destitute of structure, as far as we can ascertain; the difference in aspect observed in them being altogether due to the different *mechanical* requirements which are to be fulfilled. As regards the cell-wall, the tube, and the membrane, their functions are plainly limitary wherever we find them; while the office of fibres is no less clear. Nor does it need any further proof than has been already given, that the origin of all these is the same.

If these views be correct, the matter actually composing the living body is susceptible, theoretically, of a threefold division, into (1) nuclei; (2) limitary or mechanical substance; (3) cell-contents. Perhaps it may be added, that the peculiarities manifested by different sets of cells depend entirely upon the character of their contents, of their nuclei, or of both; but this point may be more suitably discussed in connection with special histology.

As to the age attainable by the structural elements now reviewed, this, of course, varies greatly. It is probable that there is a continual substitution of new molecules for those expended in the performance of function, throughout the entire economy. Some parts, as for instance the epidermis, are exposed to influences which wear them away; others, like bone, are apparently permanent; in either case, provision is made for a more or less abundant supply of fresh material, in the form of nutriment. How long a time is required for the entire destruction and renewal of the human body by this molecular substitution, cannot be accurately estimated, although an idea prevails that such a process is completed every seven years. The period must vary both in the individual tissues and in the aggregate of them, according to several conditions; such as the time of life, differences of constitution or of external circumstances, and the accidental influences of disease.

Another question occurs here, as to the mode of multiplication or new formation of cells in the living body. The primordial cell, the ovum, as has already been said, divides and subdivides into many segments, each of which becomes a complete cell; but this method is in the adult animal almost confined to the growth of cartilage. Most commonly the new cells arise in a blastema derived from the blood, under an influence exerted by the adjacent tissue; without which *assimilative* force it would seem impossible for their development to be begun. Gemmation or budding is not seen in any of the cells of the higher organized beings, nor is it probable that the formation of cells within cells is carried on beyond the period of embryonic life, in the healthy tissues.

So far, we have dealt with normal histology only; it may, however, be stated here, that we find in morbid deposits the same general elements as in the healthy tissues; in other words, they are amenable to the fundamental laws of structure. The discussion of this subject belongs, of course, to a later portion of this article.

II. To take up thoroughly the study of *the several tissues, including their normal anatomy, their physiological functions as connected with this, and their pathological changes*, would be to fill volumes. Our aim must therefore be to give a brief, but discriminating *resumê* of the established or disputed doctrines in regard to the main topics comprised under the above heads; and even this will occupy so much space, that many minor trains of thought must be left to the reflection of the reader.

In order to discuss the tissues systematically, some definite arrangement of them is desirable. And as we are especially concerned, at present, with the visible characters observable in them, it would seem most proper to found our classification upon the peculiarities of structure revealed by the microscope. But, as a certain relation exists between form and function, and as, moreover, we claim for microscopy an auxiliary office only, we may legitimately draw upon other sources of information, just as other methods of study are greatly indebted to ocular investigations for a similar purpose. Without so doing, the only classification that could be offered would either be vague and inadequate, or consist in a mere enumeration of organs. I would therefore propose the following arrangement, hoping to justify its propriety and convenience in the course of the ensuing discussion:—

1. The MECHANICAL tissues, including
    (*a*)—The *passive:*
        Limitary membrane,
        Bone,

Cartilage, } Fibro-cartilage,
Fibrous tissue, }
Adipose tissue;

(b)—The *active:*
Striated muscle,
Non-striated muscle.

2. The NERVOUS, including
Corpuscles of nerve-centres,
Commissural filaments.

3. The GLANDULAR, including
Serous membranes,
Mucous membranes,
Ductless glands.

4. The OPTICAL, including the
Cornea,
Lens,
Hyaline membrane,
Membrane of Jacob.

5. FREE CORPUSCLES, including those of the
Blood,
Chyle,
Lymph.

I have based the above classification upon the most convenient peculiarity of each tissue; it is by no means intended to designate the sole, or even the most important functions pertaining to its items. All the elements of the body are, however, embraced in it, under separate heads, and in each of these, except the last of all, a function is stated or implied. We shall take them up in the same order.

(1) The MECHANICAL tissues, as their name implies, are concerned in the production or transmission of mechanical force, or in that resistance by which alone such force can be utilized.

(*a*) Among the *passively* mechanical tissues, the first place belongs properly to *limitary membrane.* The importance and extent of this so-called *structureless* expansion of organized matter may be estimated from the fact that, as before stated, it constitutes the cell-wall, and the boundary of all surface-layers of cells; and that it is probably identical with most, if not all the true fibres. The term *tissue* is perhaps incorrectly applied to it, since its atoms are so arranged as not to present any visible interweaving. Since, however, it plays a very important part in the animal economy, it may be allowed to rank with its co-workers; and since its only apparent office is a mechanical one, it is fitly placed in this connection. I would suggest the equal impropriety of the term *structureless* as applied to this form of matter, which in fact is fundamental to all structure; the word *basement*-membrane is far more expressive of the true position to which it is entitled. One fact would seem to prove its purely mechanical function: wherever any other duty is performed, there is added some substance by way of cell-contents, to which the action may be fairly ascribed.

It is through this limitary membrane, whether in the form of a cell-wall or a basement-membrane, that the liquids pass in the phenomenon of endosmosis and exosmosis. And according to the views now prevailing,* this action must be looked upon as altogether mechanical; at least the membrane itself exerts no elective influence. So long, indeed, as the law of indivisibility of matter remains in force, the mere passage of the liquids must take place through pores, and hence the solid particles of the basement-membrane must be arranged in a definite order. It is therefore evident that there exists, so to speak, a system of microscopic hydrostatics and hydro-dynamics, and that a very important function of the membrane in question is carried on under the provisions of this system. Supposing, indeed, the regulation of the interchange of liquids to be the sole office of basement-membrane, what could be more absolutely essential to the proper working of the animal economy?

From what has now been said, it may be seen that the discussion of this subject must spread itself throughout the whole of the present article. I would simply add here, for the sake of completeness, that the cell-walls of morbid deposits do not seem to differ in any respect from those of the normal structure; and that the only change which basement-membrane undergoes in disease, is a breaking down, either from defective supply or quality of nutritive matter, or from a loss of assimilative power.

The microscopic history of *bone* is of great value, since it affords a very striking illustration of the degree to which cell-transformation may take place. The originally nuclear character of the lacunæ, and the hardening of the cell-contents by deposition of earthy matter, are evident from the examination of sections made from bones at different stages of growth. And the fact that bone may be formed out of either fibrous tissue, cartilage, or cells, (to be further dwelt upon in connection with some morbid deposits,) has great significance as bearing upon the relation existing between cells of apparently diverse character. In the study of the repair of fractures, the microscope has been of essential service, showing the analogy which exists between this process and the healing of injuries of the soft parts; the primary state of the reparative material is found to be either that of nucleated cells or of nucleated blastema, the secondary, that of cartilage or fibrous tissue.

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* These views are admirably set forth in Dr. Draper's "Human Physiology," chapter vii, on "Absorption by the Blood-vessels."

Mollities ossium is shown by the microscope to be a degenerative change in the bony texture, or, in other words, a defect of nutrition; and, as will be further insisted upon, this fatty deterioration is amenable to the very same laws governing it in the other tissues.

Ranking structurally with the bones, and allied to them in their morbid states also, are the teeth. Here we find the cement, or tooth-bone, closely resembling the common osseous tissue; the dentine presenting a marked analogy, in its wavy canaliculi, to those seen diverging from the lacunæ in a thin section of the fibula; the enamel, the most earthy of all the compounds of the economy, still bearing the same typical impress in its form, origin, mode of nutrition, and diseases. It is difficult to conceive why the sum of these structures, the tooth, should be separated from its analogue in form and office, the bone. No difference whatever exists between the two, except in the mode of origin of the tooth from the papilla of the dental groove; but this is entirely similar to that of a flat cranial bone. And although in so authoritative a work as Todd and Bowman's "Physiological Anatomy," the teeth are said to be developed "from the mucous membrane* covering the dental arches, and not from the maxillary bones," whence the inference is drawn that they "seem to correspond with the tegumentary appendages of animals, such as horns, nails, feathers, and not to be a portion of the true osseous system;" the reason assigned does not appear to justify the setting aside of such important analogies. Here the relationship, doubtful to the naked eye, is fully established by microscopic investigations.

Cartilage is a structure accessory, as it were, to bone; wherever found, it is either a transitional stage of ossifying matter, or supplementary to the harder parts of the skeleton. Nerves are not found in it at any time, nor are vessels, except during its formation or ossifying stages. Cartilage presents two processes of cell-multiplication—that by division of complete cells, and that by endogenous formation of young cells. The *matrix* of cartilage seems analogous in many respects to basement-membrane; it sometimes shows no visible trace of structure, but often has a dimly granular, or even fibrillated appearance.

Now this matrix may have a more important significance than would at first appear. This granular or fibrillated character may be assumed to be the shadow of an actual fibrous texture; and thus is established a relationship at least between the substance of the matrix and the substance of the fibre. But the matrix undergoes a transformation into the wall of the bone-cell; so that here we have matrix, fibre, and cell-wall virtually identical. The subsequent change of the latter by the deposition of earthy matters is, so to speak, a mere accidental circumstance, and therefore does not impair the force of the fact in reference to the laws we are now endeavoring to illustrate.

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* This is surely a very loose expression; no *mucous membrane* could ever give origin to bone, or tooth-structure, although such a formation might readily occur in the fibrous tissue underlying it.

The only pathological changes of a simple character met with in cartilage, are its thickening and its atrophy. It is often the case that minute oil-globules are visible within the cells of apparently healthy cartilage, and it may be that fatty degeneration of cartilage is a common constituent of the ulceration and other diseases to which the joints are liable. But this subject greatly requires further elucidation, and calls for very careful and discriminating study, owing to the many sources of error in both the observation and appreciation of phenomena.

Some hints have been already thrown out in regard to the histological position of *fibrous* tissue. No doubt can exist as to the very close alliance between the *white* and *yellow* fibres; the difference between them probably lies in their chemical elements, and is non-essential, at least for our present purpose. According to the researches of Dr. Leidy, as published in his edition of Sharpey and Quain's Anatomy, the origin of both kinds of fibres from nucleated cells can be clearly made out in the embryo; and we can sometimes, by the addition of acetic acid, render visible the nuclei of the white variety when fully formed.

In the transformation of the original cell into the fibre, of whichever kind, the nucleus and the cell-contents seem to become equally useless. There is no evidence to show that the nucleus, when brought into view by means of acetic acid, retains any functional activity; while the fact that in many instances no nucleus can be detected, would favor the idea of its presence being merely accidental. Nor can the fibre be so treated as to give any sign of a central cavity, either with or without contents.

Here then we have, it is evident, an extremely low organic form—a mere extension of material, bearing the same relation to the limitary membrane before described, as flax twine to a linen fabric; and assigned to this form an extremely low function—the lowest, perhaps, of any. Neither in white fibrous tissue nor in yellow is any force generated, of any kind, unless it be capillary attraction upon their nutritive fluid. Low, however, as the function of fibres may be, it is nevertheless of vast importance in the economy; there is not a single organ which would without their aid be available, either for protection, support, or connection.

Occupying this humble position, fibrous tissue is actually exempt from all disease, except inflammation, and even this does not induce any pathological change in its microscopical characters. I may be allowed here to remark upon the wisdom of the provision, by which so wide-spread and indispensable a constituent of the frame is of such a nature as to be undisturbed by the derangements of the higher textures.

A change sometimes observed, but only becoming pathological by disturbing some other tissue in its function, is the conversion of fibrous tissue into bone. Thus the coracoid ligament may become completely ossified, still retaining the grosser outlines of its primary condition; showing that there is nothing peculiar in the fibrous tissue from which the teeth and cranial bones are developed, but that cells, fibres, bone, and cartilage are very intimately allied, if not absolutely identical.

Such an inference might also be drawn from the existence of *fibrocartilage*, in which the matrix is plainly of a fibrous character. In this we have only a more marked degree of the fibrillation alluded to as often observable in the simple cartilages, and particularly distinct, according to Dr. Leidy, in those of the articulations.

Adipose tissue, besides its mechanical use in the prevention of injurious pressure, plays a very important part in the maintenance of temperature. Neither of these functions is recognizable by the microscope, which, however, exhibits the extremely simple character of the tissue in question; the oily matter being confined within cell-walls, as contents, and, according to Todd and Bowman, a nucleus being present in every such cell in the early stage of its existence. This is perhaps the very lowest form of cell; it is certainly the least essential, and multiplies or disappears the most readily. Fat may be abnormally deposited, but is not itself liable to morbid change.

Next in order come—

(*b*) The *actively* mechanical tissues, which might have been called the *contractile* tissues, on account of their inherent and distinguishing property of shortening under the influence of stimulation. But the anatomical peculiarities presented by them beneath the microscope are equally distinct from those of all other tissues, and moreover serve to divide accurately the two varieties from one another. The close alliance between striated and non-striated muscle is evident from the identity of their primary condition in the embryo. Wherever a quick and energetic action is requisite, be it voluntary or involuntary, there we find the striated form; wherever, as in most of the involuntary muscles, the contraction is to be gradual and sluggish, the non-striated. The precise nature of this contractility is absolutely unexplained, in either; but the idea would seem plausible that the property resides in the *cell-contents* in each case. The division between the several cells constituting a fibre of the striated variety is imperceptible, although the application of acetic acid, by bringing out their nuclei, affords us a trace of their position. And I would suggest that perhaps the undulatory outline of a contracting fibre, sometimes so very regular, marks that of the individual cells in their linear arrangement; in which case the contraction may be described as an increase of the equatorial diameter of each cell at the expense of its polar.

Now this contractility may be easily seen to be altogether independent of nervous influence, by watching an isolated fibre under a magnifying power of 250 diameters. Such a fibre, taken from the leg of a living frog, may remain quiescent, but sometimes it may be seen to contract in the manner commonly described. Again, it will often begin to darken, its transverse striæ will *disappear*, and its outline will become irregular, while its direction may be variously altered; numerous *longitudinal* lines, short and without definite arrangement, previously visible, become more distinct. As far as I have yet observed, this change always commences at the free ends of the fragment, and not at any intermediate point.

Microscopic investigation has of late years established the existence of non-striated muscular fibres in many parts formerly considered to depend for their contractility upon some other provision, or perhaps to have no expulsive power upon their contents. Among these parts may be mentioned the skin, the prostate, the urethra, and the trabecular tissue of the spleen; the muscularity of which the microscope has placed beyond a doubt.

We are also indebted to the microscope for the settlement of another question, connected with the subject of reproduction. The muscular fibres of the uterus, having fulfilled their office in expelling the fœtus, undergo a physiological fatty degeneration; just as militia-men at the close of a war are very apt to become worthless members of society. Such a change occurs in unstriated muscle elsewhere, as a pathological process; as for instance in the coats of arteries, and in the intestinal walls. It may take place also in the striated variety, affecting the heart more frequently than any other portion of it.

Allied to this species of degeneration, and often existing in connection with it, is a peculiar deposit which has been termed *fibrinous*. This presents the appearance of fibro-plastic or elongated cells, together with some granular and fatty matter; it has been observed chiefly in the heart's walls, occupying sometimes the whole and sometimes only a part of their thickness. The neighboring muscular structure is often found to have undergone a conversion into fibrous tissue, either coincidently with the deposit or as a later stage of it; while intermixed with the deposit are muscular fibres, some in a state of fatty degeneration, some merely broken up, and some entirely unchanged. The boundary line between the healthy and diseased tissue is in some places well marked, in others indistinguishable. Often the two layers of pericardium exhibit adhesions such as exist in the pleura just over a spot of hepatization in a lung affected with pneumonia, and fibrinous clots are apt to occupy the corresponding endocardial surface. Similar fibrinous deposits are commonly present in the spleen, probably in connection with the smooth muscular fibre of its trabeculæ, in cases of this kind.

Here then we have an analogy drawn, by means of microscopic observation, between the two forms of muscle; they are proved to be allied in their origin, in their most essential property, and in their degenerative changes; and this fact affords a key to some physiological phenomena, as well as to some diseased states. Moreover, we have an additional instance of cell-development and metamorphosis; so that the idea of a sameness, not only in origin but in structural type, between the various tissues, is here again carried out.

(2) NERVOUS tissue presents a peculiar interest, in that it constitutes the medium of communication between the material and the immaterial. To enter upon the discussion of its physiology, would be to overstep the bounds of microscopy, nor could it be fairly dealt with in the space here allowed us.

We must, however, claim for the miscroscope the merit of having assigned to the nervous system accurate boundaries; of having shown the cellular character of certain portions, and the tubular or commissural character of others, and thus of having rendered essential aid in the investigation of the material agents by which the inscrutable processes of sensation, volition, and motion are carried on.

Some points have yet to be cleared up in reference to the minute anatomy of this portion of the frame. As to the mode of origin of the tubules at the nerve-centres, although some may very probably, as asserted by Kölliker, Robin and others, be prolongations of the filaments of caudate nerve-cells, yet according to Valentin tubules may be seen forming loops within the vesicular matter; and this latter view is supported by a case of monstrosity observed by Lonsdale.* Now if, as seems most likely, both these views are correct, I would suggest that they may combine to explain certain phenomena of nervous action; that all voluntary movements may be due to an influence exerted through the cells of the cerebro-spinal centre upon the nerves arising from them, while reflex action is carried on by the looped fibrils; each loop being the terminal part of an afferent, and the commencing part of an efferent fibril.†

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* Quoted in Todd and Bowman's Physiol. Anatomy, from the Edinburgh Med. and Surg. Journal, No. 157.

† I hope to be able to investigate this point more fully at some future time.

Again, the mode in which the ultimate nerve-fibrils are disposed beneath sentient surfaces is a matter still *sub judice.* It is asserted by some high authorities that they end in loops; by others, that their extremities are free; and by others again, that both these arrangements are observable. Connected with this point is another, in regard to the nature and office of the Pacinian corpuscles. The idea which perhaps finds most favor is, that these bodies are formed of concentric layers of a substance resembling the cell-wall, the innermost one inclosing the terminal portion of the nerve-tubule; but why or wherefore such a provision exists, is as yet unknown.

Microscopic examination has shown the existence of a layer of gray nerve-cells, forming the outer lamina of the retina at its posterior part. Hence the optic nerves are merely commissural; and hence also we have an explanation of the fact that gastric irritation may give rise to muscæ volitantes, diplopia, etc., this *portion of the sensorium* partaking in the disturbance. May not this circumstance account also for the frequency of ocular spectra in the various forms of delirium?

(3) No department of physiology is more indebted to microscopical research, than that of Secretion. (This term is here used in its widest sense, and in our classification the word *glandular* was employed as coextensive with it.) The material requisites for the process are, a vascular supply, a limitary membrane, and one or more laminæ of epithelial cells. How it is that one mucous or serous tissue differs from another,—why one should separate the constituents of urine and another those of saliva, cannot with our present methods be determined. Except in the case of the liver, and in that of the so-called blood-glands, the structural elements above enumerated are demonstrable in all secreting organs; and even in those just named, an *analogous* arrangement may, I think, be considered to exist.

These general statements are now to be illustrated and defended by individual instances.

Serous membranes, as every medical tyro knows, are shut sacs. They do not shed their epithelial cells perceptibly, but nearly always have only a single layer of them, which is very probably persistent; merely undergoing such molecular change as is inseparable from the performance of any function. The peritoneum, pericardium, pleuræ, arachnoid, endangium, tunica vaginalis testis, synovial membranes, and bursæ, although varying greatly in their extent and importance, and in the degree of wear and tear to which they must submit, are structurally identical. And the propriety of placing them under the head of *glandular* tissues will further appear when certain pathological conditions are brought under review.

In *mucous membranes* there is always either a free surface, or an outlet by which the cast-off cells are removed. The substratum of connective tissue is looser here than in serous membranes, and the epithelial cells form layers upon the surface of the basement-membrane. Now if we begin with the mucous lining of any gland, say of the parotid, we may trace a perfect continuity, through the skin, of every part of the *mucous epithelial system* with every other part. An exception to this statement would seem to exist in regard to some of the intestinal glands; but they do not in reality present any deviation from it.

Hence one epithelial system, including the skin and all the mucous membranes, constitutes as it were the surface-layer throughout the body; while another is made up of a number of shut sacs, the serous membranes, which exist independently of the former and of one another. The epithelial cells which line serous cavities are invariably of the squamous variety; those found upon mucous surfaces are squamous, columnar, or intermediate, and may or may not be furnished with cilia. In some glands, as for instance in the lactiferous tubes of the breast, and in the tubuli uriniferi, the cells are more evidently spherical than elsewhere. The serous membranes might have been ranked with the mechanical tissues, but for their structural characters; since the office they fulfill is simply the prevention of undue friction. But not only is this end attained by means of a process within the general definition of secretion; several facts go to prove the alliance subsisting between the two forms of epithelial tissue. Thus portions of uriniferous tubules, becoming closed, dilate into sacs having all the appearance of membranes originally serous; and at the fimbriated extremity of the Fallopian tube, a mucous membrane is continuous with a serous.

Now if, moreover, we consider the relations subsisting between the lymphatic and blood-vessel systems, we must see that the term *endangium* should include the lining membrane common to both, thus signifying a serous expansion of very great extent. And if the relation of this membrane to the mucous lining of the intestine be properly appreciated, the endangium would seem to derive blood-material, the mucous membrane secretion-material, by a process of interchange. Perhaps it may even be asserted, that the blood is in a manner secreted from the food and drink taken into the alimentary canal.

Of the matters separated from the blood, some assume forms the presence of which seems indispensable to the accomplishment of their allotted purpose,—as in the seminal liquid; others, like the biliary constituents, continue amorphous. The minute anatomy of the secreting membranes does not afford any clue to the cause of these variations; the question is only carried a step further back when we ascribe them to some difference in the contents of the cells.

Secretion is, therefore, reduced to this: certain substances being placed upon either side of a septum, made up of two layers of basement-membrane, with an epithelium on each free surface, an interchange goes on between them; the nature of the interchange depending upon that of the cell-contents, or perhaps upon that of the nuclei, of the epithelium upon one side. Did our space permit, the further evolution of this idea, with a review of its special applications, would bring up some very interesting topics for discussion; but it must for the present be postponed. Here, however, we must claim for the microscope the credit of having shown the precise character of the anatomical elements employed in secretion, and of having thus paved the way to greater accuracy of thought and expression than could otherwise have been attained; and we must hope that more extended observation, particularly in microscopical chemistry, may afford a still clearer insight into the mysteries of this very important process.

The pathological changes undergone by serous membranes are confined to inflammation and morbid deposits, and will be discussed hereafter. Mucous membranes are sometimes affected with a local excess in the production of cells, constituting in part the growths known as epitheliomata. They are also, the skin especially, liable to diseases of which we know very little except the external appearance. In some of these, animal or vegetable parasites are discoverable by means of the microscope; but whether as cause or effect, or as a mere coincidence, has not yet been determined.

Perhaps no class of affections has more completely baffled the attempts of etiologists than those just mentioned; a fact to which may be ascribed the vague nomenclature and the empirical treatment very often adopted in regard to them. A series of well-directed microscopical observations upon this subject, although not promising a complete solution of the problem, might possibly either supply new data, or shed light upon facts already known.

Upon the subject of the *ductless glands* we have not much to say, the questions concerning them belonging much more to physiology at large than to microscopy, although sometimes originating with the latter.

The *spleen*, the largest and most readily investigated of all these bodies, has received most attention from microscopists. The principal point of discussion in regard to it is its relation to the blood-corpuscles,—whether it is the nursery or the cemetery of those bodies. Among German physiologists, Kölliker adopts the latter view, Gerlach and Virchow the former. These authors base their opinions upon microscopic observations made by themselves; Kölliker's view is sustained by Mr. Gray, in his work on the spleen, on like grounds. Most American physiologists favor the idea that the spleen is a blood-forming organ, but are influenced rather by certain general reasons than by the visible phenomena.

But this question, as well as the anatomy, physiology and pathology of the *thymus and thyroid bodies* and *supra-renal capsules*, would require too much space, and would bring in too much irrelevant matter, to be discussed here. All these points are of great importance, doubtless; but what is known concerning them is at present in so crude a state as to forbid any attempt at generalization. Nor can we hope that here the microscope alone will clear up matters, although we may assert that, aiding and aided by close and careful reasoning, it will show itself not only useful, but indispensable.

(4) The term *optical* has seemed to me best adapted to designate certain elements found in the eye; some of them have an office partly mechanical, but their transparency, with or without refracting power, is their main peculiarity.

Microscopic research has demonstrated the nature of these parts to a great degree; the existence of a layer of epithelium on the posterior surface of the cornea, on the inner surface of the capsule of the lens, and on that of the membrane inclosing the vitreous humor, would seem to justify the idea that three serous membranes exist within the globe of the eye.

The cornea and hyaline membrane are shown to consist of fibres, whose peculiar transparency prevents their interfering with vision, while the mechanical support they afford is of essential importance. With regard to the crystalline lens, some difference of opinion still exists; Kölliker, Gerlach, and other German micrographers, consider its structure as tubular, while Todd and Bowman describe it as fibrous. Robin adopts the former view.

Great attention has been paid to the study of the membrane lining the concave surface of the retina, first described by Jacob in the Philosophical Transactions for 1819, and named after him. This *bacillar* layer may perhaps be looked upon as a modification of the columnar epithelium elsewhere met with, or it may be ranked with the fibrous tissues; its great value consists in its refracting power, and I would suggest that amaurosis may sometimes be due to the loss of this property. Again, supposing an analogy to exist between this structure and the lens,—an idea borne out by the views of some anatomists,—an alliance would thus be shown between some forms of amaurosis and cataract. But to establish the correctness of such a supposition would demand careful research, in the face of serious practical difficulties.

Upon other points in the pathology of the eye, deeply as this subject has been studied for centuries, we may yet hope to derive much that is valuable from well-directed investigation with the aid of the microscope. Very little has hitherto been attempted in this field.

(5) Of all the matters subjected to the scrutiny of science, few possess a higher interest than those "vital fluids" which we have now to glance at in their microscopical aspect. Constituting in fact one mass of circulating material, the chyle, lymph and blood are intimately allied; by some authors it is asserted that no difference exists between them except in degree of development.

According to this latter view, the chyle-corpuscles pass into lymph-corpuscles, and the majority of these again into red blood-disks, which, having run their course, are disposed of in some manner not yet positively ascertained. Its opponents, among whom is Dr. J. C. Dalton, of New York, consider the red corpuscles as persistent forms, essentially differing from the white, which are derived from the lymph. Dr. Dalton states also, in his recent work on Physiology, that the white globules are destitute of nuclei, and denies the existence of a cell-wall in the red disks; in these points we think very few observers will agree with him. And since no theory equally satisfactory is proposed as a substitute for the one thus rejected, the view expressed in connection with the subject of secretion, as to the origin of the blood-elements, seems to us the correct one.

Many difficulties are in the way of a direct solution of the questions which arise in regard to these matters. To trace the chyle, with its molecular base, along the mesenteric lymphatics, to watch the appearance in it of the white corpuscles, to follow these along through the thoracic ducts into the venous system, into the lungs, and then into the general circulation, to observe the gradual metamorphosis into the red blood-disk, is possible only in imagination. But when the aided eye has carefully marked the appearances presented by the circulating fluid at different points, reason combines these data with others, and the chain may be completed.

Comparative anatomy is here of great service. It seems to be in favor of the idea that the red disk is a cell which has no longer a perceptible nucleus; since in many vertebrata the coloring matter is contained in the interspace between the nucleus and the cell-wall. The study of the blood in the very early stages of life has also a high degree of interest. The blood originates, like all the other structures, from the plastic matter constituting the contents of the primitive cell or ovum; and just as muscular fibre contracts, or synovial membranes secrete, so the blood-disk at once assumes its function of carrying oxygen.

The office of the white corpuscle, unless it be to pass into the red disk, has not yet been pointed out. The microscopic appearances of the circulation, and the relations of the two forms of corpuscles, will be considered when we speak of processes.

But one pathological condition of the blood has been clearly made out by microscopical examination. It is claimed as a discovery both by Bennett and Virchow, and consists in an excess of the white corpuscles over their normal amount. We must, however, look behind this for the essence of the disease; something is wrong in the process of formation of the blood. Nor can we help regarding this circumstance as a confirmation of the idea that the white corpuscle is a developmental form of the red disk; but the precise starting-point of the deviation from health has yet to be assigned.

The blood-corpuscle-holding cells, described first I believe by Virchow as occurring in clots of extravasated blood, and especially frequent in the human brain after apoplexy, do not seem to have any important pathological signification.

Statements have been from time to time put forth, that alterations in the microscopic characters of the blood result from the action of various poisons; and Dr. Joseph Jones, in a paper published in Vol. viii of the Smithsonian Contributions, gives cuts of the precise change of form observed in the blood-cells of animals dying in an atmosphere of hydrogen. Many of these statements are extremely vague and unreliable; and the source of the error in other cases may be found in the action of water or other menstrua upon the cell-wall or its contents.

Having now reviewed rapidly, but we hope not superficially or unprofitably, the present state of microscopic anatomy, we must postpone the consideration of the remaining portions of our subject until another occasion. Our aim is not only to state what *has been* done, but to suggest what *is to be* done, in the hope that the position of microscopical science may be improved as well as vindicated and strengthened.

ART. III.—*Proceedings of the Pathological Society of Philadelphia.*

Reported by the SECRETARY.

WEDNESDAY EVENING, February 9th, 1859.

Vice-President, DR. STILLÉ, in the Chair.

Pseudo-Membranous Laryngitis in an Adult.—DR. ALBERT H. SMITH presented a specimen of pseudo-membranous laryngitis, in which the false membrane had been moulded into a cast of the trachea and ramifications of the bronchi.

Louisa Jones, aged twenty-two, single, native of Canada, domestic, was admitted into the Pennsylvania Hospital, December 23, 1858, with chronic bronchitis and amenorrhœa. She had had a cough for about three months, not very severe, and not increasing; she suffered with violent headaches, and had not menstruated for four months. When admitted, she complained of pain in the chest over the sternum; of headache; coughed considerably, and expectorated tenacious mucus; had mucous râles in the lower posterior part of both lungs, with sonorous and sibilant râles above and in front; percussion was normal over the whole chest. There was no marked emaciation; her appetite was tolerably good. She slept badly, but had no night-sweats.

She was put upon treatment for the bronchial affection, and also in reference to the restoration of her menses. She improved considerably in her general health; increased in flesh, her appetite improved, and the chest symptoms diminished, though there still remained some sonorous and mucous râles.

On the nineteenth of January, she complained of great soreness of her throat, with difficulty of swallowing, which had been coming on for several days; but as she had frequently had attacks of the same kind, she thought it would pass away, and did not mention it. On examining the throat I found considerable enlargement of both tonsils, the right being much the larger. The usual means were taken to reduce the inflammation: the tonsillitis appeared to be running through its regular course. The day following this attack she menstruated. On the twenty-first, the swelling had increased; she swallowed with great difficulty, and at times had dyspnœa, although not violent. The tonsils almost occluded the pharynx and fauces; they were still hard. A lancet was plunged into them, but no pus escaped. The chest symptoms were in no respect changed. On the twenty-third, the difficulty of breathing had increased; the tonsils completely closed the fauces. A very deep incision was made with a scalpel into the substance of each tonsil; a free flow of blood took place, but no pus. There was still no increase of the physical signs in the chest, so far as could be detected on careful examination. In the evening, she told me she felt much better; her breathing was much more free, and she had swallowed some soup. I did not at this time examine her lungs, as I had thus far had no reason to suspect anything more than a severe tonsillitis. About three hours afterwards, while I was absent for a short time from the hospital, my colleague, Dr. Hutchinson, was called to her with the statement that she was suffocating; he went, but before he reached her she had expired. Nothing could exceed my surprise, on returning an hour later, than to be informed of her death.

Autopsy, made eighteen hours after death.—The trachea and œsophagus were cut across the middle and carefully dissected up as far as the posterior nares; the tongue and pharynx were removed with the tonsils. These last were found enlarged so much as to close almost entirely the air-passages, the right being as large as a walnut. Lining the pharynx posteriorly to the tonsils, and resting upon them, were large flakes of membranous exudation, at least one-sixteenth of an inch in thickness; they could, however, be removed with great facility. Passing downward, we found the upper surface of the epiglottis invested with the same exudation, and a band of firm membrane passing from it to the pharynx posteriorly, and preventing it from closing. The under surface was also coated with exudation, and on opening the larnyx and trachea, we noticed a continuous membrane investing the whole of the larynx, becoming in the trachea a perfect tube-cast that could be readily separated from the mucous membrane, which was highly injected. On further examination of the portion of trachea which had been cut off, this cast was found to extend, without any interruption or break, into the secondary ramifications of the bronchi.

The lungs were entirely free from tuberculous deposit, but slightly emphysematous above; the other organs of the body were perfectly healthy.

Case of Sanguineous Apoplexy of Ventricles and Subarachnoid Space.—DR. ALBERT H. SMITH presented a specimen of apoplexy.

Ann Jones, aged seventy, colored, native of Philadelphia, cook, was conveyed to the Pennsylvania Hospital, on the afternoon of January 29, 1859, by two policemen, who had found her in the street in a state of insensibility. As was afterwards learned, she was a woman of remarkably vigorous constitution, her friends having no recollection of her ever having been sick; she was a widow, with eight children living; had been in the habit of going out as cook, and left the house where she boarded on the morning before her attack, in apparently perfect health. Nothing further could be ascertained of her until she fell suddenly while walking in the street, and was immediately brought into the hospital. She was a woman of strictly temperate habits in every respect.

When admitted, she was lying motionless, except the quick heaving of her chest; completely comatose, and not giving the least indication of consciousness on being shaken or loudly called. Her skin was cool and dry; her pulse forty, very irregular, full but compressible, occasionally intermittent, with constant variation in its force; respiration forty-five per minute, regular in rhythm. Her pupils were contracted to a point, and were entirely insensible to light. There was no strabismus, nor facial distortion; and not the least stertor. Her breath had a peculiar vegetable odor, somewhat narcotic.

Her stomach was thoroughly washed out—an emetic of sulphate of zinc acted promptly; a purgative injection also operated readily; but she remained in the same condition as before. While being cupped on the back of the neck, she gaped, but gave no further evidence of consciousness or muscular power.

On the following day she was still in a profound coma; not the least sensibility or consciousness: while being bled from the temporal artery, she gaped a second time. Her pulse was sixty, full, but weak, quite regular; respiration thirty, regular; action of heart normal; no symptoms of pulmonary affection. After the abstraction of about six ounces of blood, her pulse rose very considerably in strength, and until eighteen ounces were taken continued so, when it fell to a natural condition. Her rectum and bladder required artifical evacuation. On the third day, there was no change, except that once, on being pinched, she moved all of her limbs and rolled slightly over; she also swallowed some beef-tea poured into her mouth; the pulse, respiration, and the general symptoms remained unaltered. On the fourth day, there was some stertor; spastic rigidity of the flexors of the arm and hand on both sides; no other irregular muscular action. Pulse sixty, and natural; respiration also natural. She had the appearance of one enjoying a tranquil sleep.

On the fifth day, there was no change.

On the sixth, her condition was greatly altered; her skin was cold and clammy; her pulse 120, very weak; stertor marked; froth about her lips; she had involuntary evacuations from her bowels and bladder. After I saw her in the morning she gradually sank until three o'clock P.M., when she died.

Autopsy.—On removing the calvaria, the dura mater was found quite healthy; there was no effusion, either sanguineous or serous, in the arachnoid cavity. The arachnoid was itself in places opake and thickened; the subarachnoid spaces, in the sulci and at the base of the brain, were filled with dark liquid blood, amounting in quantity to about two ounces; the pia mater was greatly injected. On cutting into the substance of the brain it was found firm and healthy. Both ventricles were distended with coagula, filling completely their cornua; the two ventricles communicated, the septum lucidum being ruptured. There was great injection of the surfaces of the ventricles, but no lesion of either thalamus or corpus striatum. There was no other abnormal condition of the brain.

The other organs gave no evidence of disease; a moderate amount of atheroma in the ascending aorta was observable.

Cancer of the Hand.—DR. LENOX HODGE presented a cancer of hand, which was amputated by Dr. Peace, before the class at the Pennsylvania Hospital.

The patient from whom it was removed is a man of about fifty-five years of age. He states that about seven years ago he noticed what he supposed to be a wart, growing on the back of his right hand, at the base of the first finger. It gradually increased for two years, when it had become half an inch in height and as large as the end of his finger. He applied to a surgeon, and had it removed. The wound healed in three or four weeks, and remained well for twelve months, when the lower part of the cicatrix began to ulcerate. The ulcer continued to spread, he says, under all applications, till it extended, on the back of the hand, from the third finger to the thumb, and around on the palm beneath the first finger.

The history thus appears to be that of epithelial cancer, and its microscopical examination corresponds with what Mr. Paget describes as belonging to that form of cancer.

WEDNESDAY EVENING, February 23, 1859.

Vice-President, DR. STILLÉ, in the Chair.

DR. HALL exhibited a specimen of tubercular deposition in the lung, following typhoid fever.

DR. LA ROCHE stated that such results, following low fevers, were more frequent in the negro than in the white. During an epidemic of typhoid fever at the Walnut Street Jail and Almshouse, many years ago, it was found that in all negroes dying of the fever, tubercular deposits existed in the lung.

DR. KELLER spoke of the difficulty of distinguishing cases of acute phthisis from typhoid fever. As a diagnostic sign he alluded to the different smell. The peculiar odor of typhoid fever has been noticed by different observers. Several years ago his attention was arrested by the odor of patients who suffered from acute tuberculosis. He has since found this odor almost invariably present. Its character is very different from that of typhoid fever, yet it cannot be exactly described. It is very peculiar and very constant.

Cancer of the Bladder and Other Organs.—DR. DARBY presented, through DR. WOODWARD, several specimens of internal cancer.

CASE I. *Cancer of the Bladder; Single Kidney.*—Nancy K., aged sixty, born in Ireland, married, and moderate in habits, was admitted into the Philadelphia Hospital on November 11th, 1858.

The history given by the patient was rather complicated, yet the following points are reliable: She was admitted into the hospital five years previously, where she remained for a year or longer, suffering from an affection of the bladder and kidneys. She was exhibited to the clinical class at that time, and treated for hæmaturia. After leaving the hospital in the same condition in which she entered it, she resided in the city, without any abatement of symptoms, and was readmitted in almost a moribund condition. Patient complained of intense burning in hypogastric region, great thirst, and disorder of the whole digestive organs. The expression of countenance was marked by intense suffering; the skin was dry, with a dull-yellow hue; tongue thickly coated; pulse weak, soft, and thread-like, with ninety pulsations to the minute. She passed constantly from the sexual organs a thick, dark-colored fetid fluid, and in such quantities as to cause a change of clothing three or four times daily. Her bowels had not been moved for ten days prior to her entrance, and then by the use of a purgative. The stomach was irritable, scarcely retaining the lightest farinaceous articles. Above the pubes there was prominence which was hard and resisting to the touch.

A vaginal examination was attempted, but from the pain given, and weakness of the patient, was discontinued. The symptoms, taken together, induced me to diagnosticate cancer of the uterus and bladder.

The treatment was palliative and supporting, anodynes, milk-punch, with lime-water, cold medicated cloths applied over the pubic region, and the bowels moved by enemata. In twelve days after being admitted, she died. In eighteen hours after death, a post-mortem was made, which corroborated the diagnosis.

Post-mortem examination.—The lungs, at two points immediately opposite, one on the right, the other on the left lung, presented small, yellowish spots the size of a pea, which exuded, when cut, a thick fluid, having, when placed under the microscope, the usual cancer-cells; the remaining part of the lungs was healthy. The heart, stomach, liver, spleen, pancreas, and kidney were healthy. There was only one kidney with its supra-renal capsule; no trace whatever existed of either of these organs on the left side; and no vessels running from the aorta, which was taken out as proof that these organs did not exist on the left side. The intestines adhered together from inflammatory action produced by pressure of the cancerous mass, which filled the whole pelvic cavity, as well as being situated on the lower lumbar vertebræ. The bladder was thickened, and a massive vascular papillary growth, springing from its walls, projected into the cavity. The lymphatic glands of the mesentery were converted into soft pulpy tumors of moderate size, which were in some parts distinct, in others less so.

The vesical walls, the papillary growth in the bladder, and the enlarged mesenteric lymphatics, all more or less soft and brain-like to the eye, permitted a thick creamy juice to exude, when cut surfaces were scraped. In this juice the following elements were detected, by Dr. Woodward, who kindly examined it:—

1. Innumerable granules, chiefly Aschersonian vesicles, of variable size.

2. Free nuclei in comparatively small numbers, of great size and dimly granular, with one, two, or three nucleoli.

3. Innumerable cells of varied shape, containing one, two, or more nuclei, already described. These cells contained often a number of large Aschersonian vesicles, and were more granular than the nuclei.

These elements could be plentifully obtained from all parts of the morbid masses, and, taken in connection with the general appearances of the new formations, justify us in regarding the case as one of medullary cancer.

CASE II. *Cancer of the Uterus.*—Amanda C., a Philadelphian by birth, married and temperate, was admitted into the Philadelphia Hospital, November 12, 1858. Patient was forty-six years of age.

She had been treated in several hospitals in this city, and had been in this house three or four times, in different wards, in the last four years. This case was transferred from the venereal ward to the surgical, in January, 1859. The history of the case is as follows:—

For five or more years she had been suffering from uterine complaints, and had several times, in hospitals, been treated for affections of the bladder and womb, with only temporary relief. Several months previous to her last entering this hospital, she had passed from her uterus constantly a dark fetid liquid, which caused much annoyance on account of odor, quantity, and pain. She was unable to work, from pain in stooping, and could not sleep unless she took a dose of laudanum before retiring. The general aspect of the patient was anæmic, with a dirty-yellow hue of the whole surface and also of the conjunctiva. The expression of face indicated mental anxiety and pain, the skin was dry, the pulse weak, pulsating over eighty to the minute, tongue coated, and the alimentary canal deranged in function. The stomach was in such a state as to permit little to remain on it, and the bowels so torpid, as only to be roused by purgatives or enemata. Soon after she entered the ward, a per-vaginam examination was made, which told the same tale that she had given; and, taking all the symptoms, and recollecting at the same time the similarity in almost every respect to the case which had but a short time since died, I again diagnosticated cancer. A similar treatment was adopted, and in a short time a similar result took place. Prior to her death, she suffered much from abdominal dropsy; and when, thirty hours after death, I made a post-mortem examination, more than two gallons of fluid were collected. This effusion was produced by the pressure of the cancerous masses of the abdominal viscera upon the veins. These cancerous masses, wherever found, presented the usual characteristics of the nuclei and cells, so often described.

The liver was in a state of fatty degeneration, and the nodules in it exhibited the usual anatomy of cancer. The kidneys were also in a state of fatty degeneration. The pancreas appeared normal; so did the spleen. The mesenteric lymphatics were cancerous. The uterus was the same, and so broken down in its structure, as to tear when being taken from the cancerous mass, which filled the whole pelvic cavity, and which had caused, by its pressure, the fæces to be retained in hardened masses, and gangrene of parts of the colon. The stomach was much inflamed from pressure upon it; this accounts for its highly irritable state. The left lung was highly congested, particularly the lower lobe; and immediately beneath the pleura, in connection with the fibrous layer of that membrane, were a number of thin bodies, one-fourth to three-fourths of an inch in diameter, one-eighth to one-fourth in thickness, around which the pleura was slightly puckered. These bodies presented the anatomy of cancer. The right lung appeared healthy, and so did the pleura; yet the touch revealed nodules varying in size, the longest about one-fourth of an inch in diameter. These nodules were soft and pultaceous, and exhibited fat granules and angular nuclei, undistinguishable from those of tubercle.

DR. WOODWARD made some remarks in connection with these specimens. The fatty degeneration observable in the liver is not an unusual accompaniment of cancer. To this fatty degeneration may be owing the peculiar cancerous color. The cancerous cachexia is not constant. It is very frequently absent in external cancers. Indeed, it does not appear until a few weeks prior to the death of the patient. It is most marked in internal cancers, especially those of the liver. It is, therefore, not the cancer itself, but the fatty state of the liver, which occasions the peculiar color which is supposed to indicate the cancerous cachexia.

Kidneys of Different Size.—DR. LENOX HODGE exhibited two unsymmetrical kidneys.

J. W., aged forty-five years, was admitted into the Pennsylvania Hospital with a fracture at the base of the skull. He died on the third day after his accident. In making the post-mortem examination, we found the right kidney to be double the normal size, while the left one was no larger than a Lima bean. Both kidneys were in their natural positions; both ureters were normal in position and size; and tubular throughout their whole extent. Every part of the body was well developed and symmetrical, except the kidneys. The urinary secretion was carried on as if both kidneys were in perfect action; there was apparently no difference, either in quantity or quality.

The small kidney was referred for microscopical examination to a committee.

Aneurism of the Arch of the Aorta.—DR. BRINTON exhibited a specimen of aneurism of the aorta, presented by Dr. Hay, United States Navy.

The patient, a Swede, aged sixty-four, had been admitted into the United States Naval Asylum on the eighth of December last. A large pulsating tumor, which had existed for sixteen years, was observed in the supra-sternal fossa, overlapped on either side by the edge of sterno-cleido-mastoid muscle. The patient, who was weak and prostrated, complained of pain in the tumor, and suffered much from vertigo and repeated asthmatic attacks. During the latter part of December his symptoms became much less marked, and he appeared comparatively comfortable. In the early part of January the pain in the tumor returned, and became aggravated, so as to produce a violent burning sensation. Constant and violent vomiting ensued; coming on often without effort on the part of the patient; the substances vomited, were frequently mixed with blood.

During the last days of January these symptoms increased, and the man suffered from repeated attacks of vertigo. He then gradually sank, and died from exhaustion on the eighth of February.

On post-mortem examination, a large aneurism of the arch of the aorta was revealed; the arteria innominata was much enlarged and sacculated; the calibre of the left carotid and subclavian was increased, and the walls of these vessels were greatly thickened. The dilation of the aorta extended down to the diaphragm, a portion of the tumor projecting into the abdominal cavity. At this point the bodies of the vertebræ had undergone partial absorption.

Considerable pressure had been exerted by the tumor upon the œsophagus; and the pneumogastric nerve of the left side had been flattened out for an inch in extent, so as to render it probable that its function had been much interfered with.

DR. BRINTON drew the attention of the Society to this fact, and referred to a case of section of this nerve, during the performance of the operation of extirpation of the parotid gland by Dr. M'Clellan, in which no injurious consequences resulted.

American Progress of Medical Science.

REPORT ON PRACTICAL OBSTETRICS FOR THE YEAR 1858.

By J. K. Mason, M.D., Fellow of the Philadelphia College of Physicians, Lecturer on Midwifery, etc.

The purpose of this report is to give a summary of all the original papers on the subject, published during the year 1858, in the United States. This has been done by the reporter, so far as circumstances would permit.

Some articles treating of purely theoretical points, more interesting to the disputant than to the practical obstetrician, have been omitted, not that the author thinks such discussions useless or unnecessary, but because his object has been to make this report as practical as possible. Some interesting papers have doubtless been passed over, and others mentioned only in a cursory manner, whose merits entitle them to a wider space than can always be afforded in such a work as this, in which condensation is of so much importance.

Case of Fallopian Pregnancy resulting in Rupture of the Cyst, and terminating in Death. Reported by Robert P. Harris, M.D., Philadelphia. Read before the Philadelphia Pathological Society, November 25th, 1857. Contained in the *American Journal of Medical Sciences*, January, 1858.—Mrs. S., the subject of this report, is stated to have been a lady of medium height, somewhat full habit, twenty-seven years of age, and the mother of an infant a year old. On the morning of the 24th of October, 1857, was apparently in perfect health, and between nine and ten o'clock, shortly after breakfast, was suddenly seized with excruciating pain in the lower part of the abdomen, followed immediately by a feeling of faintness. Her pulse became very rapid and feeble, extremities cold, and surface of the body very pale, as though exhaustion were being produced by internal hemorrhage. Every sort of stimulation was used, but to no purpose. The pain, which at first was very severe, soon diminished, and finally ceased. She gradually became more and more feeble, so that in a few hours from the commencement of the attack, all hope of recovery was abandoned. She remained in a moribund condition, with little apparent change, until, from a gradual loss of vital power, she ceased to breathe about seven o'clock on the following morning, twenty-one hours after the commencement of the attack.

The post-mortem examination of this case, which was with some difficulty obtained, is interesting; we shall, therefore, give Dr. Harris's description of it:—

"Upon uncovering the body, the abdomen was found much distended and tympanitic over its whole extent; and incising the skin and soft parts down to the linea alba a thickness of adipose deposit, varying from an inch to an inch and a half, proved the full state of health of the patient at the onset of her disease. Further dissection showed that the intestines, both large and small, were very much inflated, and that the omentum was wrinkled and drawn up to the right upper portion of the umbilical region.

"Extending the vertical incision down to the pubis, we were arrested in our examination by the escape of a small quantity of serous fluid, and upon drawing the intestines upward from the brim of the pelvis, we found that the cavity of the pelvis, as well as the lower and back part of the abdominal cavity, were filled with blood in a partly fluid, partly coagulated state. After this was removed by means of a sponge, to the amount, perhaps, of half a gallon, a small abnormal growth in the course of the right Fallopian tube arrested our attention, and caused us to dissect out and carefully remove the uterus with its appendages. The uterus proved to be scarcely, if at all, enlarged beyond the size we usually find it in healthy women who have borne children. Its cavity contained a little mucus slightly tinged with blood, but no trace of a membrana decidua; the ovaries were healthy, of normal size, but very pale in color, from their anæmic state; the left Fallopian tube presented nothing unusual; but in the right one, immediately above the ovary, was a tumor of an oval form, slightly flattened antero-posteriorly, about an inch and a quarter long, an inch in its vertical diameter, and of a reddish-blue color. Upon close examination, a small opening of a little more than a line in diameter was detected at its upper surface, perforating the edge of the broad ligament. This hole communicated with the peripheral portion of the body, but not with its interior cavity. An incision made through the cortical portion, so as to divide the body to its centre, revealed a body containing a small diaphanous sac, within which was a human embryo of a pure white color and half an inch in length, looking a good deal like a common maggot."

The chief peculiarity of this case was the very early age in the development of the ovum at which the rupture took place, but the accident is plausibly accounted for by the reporter, who states that the female was menstruating at the time. In his own words: "The increased flow of blood to the uterine organs probably contributed to produce the rupture of the cyst, which appeared to have given way very much after the manner of an aneurismal sac."

Dr. Harris justly remarks that the tubal or Fallopian is by far the most frequent of all the extra uterine pregnancies; he then discusses the cause of Fallopian pregnancy, and remarks on the great difficulty of diagnosis in some of these cases. But we have no space for further extracts.

Dr. Harris thinks that little can be said that is favorable to the operation of gastrotomy in extra uterine pregnancy; he is borne out in this opinion by Cazeaux and Moreau, who are, as he remarks, strongly opposed to the operation, regarding it merely as a last and desperate effort of professional duty to save a patient whom no other means can reach.

In the same number of this journal, page 44, is

A Case of Extra Uterine Pregnancy. By CHRISTOPHER JOHNSTON, M.D., Surgeon to the Union Protestant Infirmary, Baltimore.—The fœtus was in this case extracted per anum, four years and six weeks after the completion of the natural term.

The amazing efforts of nature to work out her own cure are here well exemplified. On the 18th of March, 1858, Mary Hamilton, aged thirty-nine, was admitted into the Union Protestant Infirmary of Baltimore. Had supposed herself laboring under dysentery for ten weeks previously, and was at the moment of her admission extremely emaciated, and much annoyed by abdominal pains, and frequent small muco-sanguineous intestinal discharges, always offensive, and at times mingled with dark semi-fluid fæces. A week after her admission, the patient was placed under the care of Dr. Johnston. The treatment she had been under (not stated what) was continued and modified in various ways, without success; thus particular attention was not paid to the local difficulty until the sixth of April, when the invalid complained of a something which pressed painfully upon her lower bowel. The doctor then made digital examination of both vagina and rectum. He discovered the os tincæ to be very low in the pelvis, but not otherwise displaced; the uterus seemed to extend suddenly from the neck into a a considerable tumor, which could be felt through the abdominal walls in the right iliac region. The following is Dr. Johnston's account of the result of his exploration:—

"Within the anal sphincter the same tumor could be perceived through the thickened wall of the gut; but at the depth of a finger's length, a culminating point was found, and upon this an opening was made an inch and a half wide by an inch in length, in which was impacted a mass of long plates, with here and there a thin sharp edge. I at once recognized, I believed, fœtal cranial bones; and upon inquiring of the patient if she had not at some time supposed herself pregnant, she replied in the affirmative, but added that that was four or five years since; and as no child was born, the enlargement was thought to be a tumor, and the idea of pregnancy discarded. In fact, from the time of expected confinement she had felt 'a lump' in her side, (which I also discovered,) but she suspected no connection between the tumor and her dysenteric attack; she thought, and her friends thought, that she had dysentery," etc. etc.

The woman's account of herself and her case is extremely clear and precise, so much so, that the doctor says that it strongly corroborated his diagnosis, and he at once proceeded to remove, by artificial means, the mass of bones and flesh which the tumor contained.

The sac contracted notably after the extraction of the contents. About six ounces of blood and a greater quantity of putrid ooze flowed out of the gut; but there was no after-hemorrhage.

"The after-treatment consisted in a light nourishing diet, a nightly anodyne, the employment of the catheter, and an ablution of the rectum at bedtime with warm water. The patient is rapidly improving without an untoward symptom; and the discharge, which at first was insufferably fetid, has become almost purulent and nearly inoffensive."

Thus this poor woman became pregnant in May, 1853, she quickened at the usual time, and distinctly felt the motions of the child; on the 3d of January, 1854, she was seized with what seemed to be the pains of labor, and the attending physician believed that she would soon be delivered. The movements of the child were felt up to the sixth, when, as the patient herself very graphically expresses it, "I experienced a sensation as if the child stretched itself out, and thenceforth all motion ceased." After-pains continued for three weeks, in spite of treatment, at the end of which time she left her bed and returned to her duties, but suffered much, as may easily be supposed, from ill health, being constantly racked with pains in the abdomen and back until the night after Christmas, 1857, she became very sick with what she thought to be dysentery, which persisted with great obstinacy until worn completely out, emaciated to a skeleton. She entered the Infirmary on the 18th of March, 1858.

Dr. Johnston is satisfied that this was a case of true abdominal pregnancy, and all the facts seem to confirm his opinion, for by the mother's account, the motions of the child were distinctly felt up to the eighth month, an impossibility, we should say, had the pregnancy been interstitial, tubal, or ovarian. His remarks are as follows: "I have now satisfied myself, by digital examination, that the fœtal sac is distinct from the uterus, although adherent to that organ—that is to say, the pregnancy was not parietal."

The patient is convalescing rapidly.

Case of Extra Uterine Pregnancy, Complicated with General Anasarca and Ossification of the Uterus. By R. W. HARDEE, M.D., Savannah, Georgia.—This young physician here describes a very interesting case with great truth and simplicity, and with a modesty which in the present age is as surprising as it is refreshing. Dr. Hardee was called upon some months ago, to visit a negro woman belonging to a neighbor. His first impression, from her general appearance, was that he had a very obstinate case of anasarca to deal with, but on examining the abdomen, he felt a large tumor resting upon the left side, directly on a line with the umbilicus. Upon a per-vaginal examination he found the uterus presented to the touch the sensation of a hard bony mass; no os tincæ to be found. She was in great pain, and suffering from general dropsy, particularly of the abdomen.

The diagnosis was obscure; all that the doctor could learn from the patient was, that the tumor had been growing in her side for fifteen years; did not remember having ever met with any injury or accident. Under these circumstances, Dr. Hardee consulted with his friend Dr. Steele, and, after mature deliberation, they decided it to be a case of extra uterine pregnancy.

"Prognosis very unfavorable." She was treated for the dropsy, with mercurials, purgatives, diaphoretics, and diuretics; purgatives seemed to give her great temporary relief. At length she increased so enormously, that tapping was absolutely necessary, which operation was repeated once a week for about a month. The author does not state the precise time of her death, but it must have been very shortly after this. Autopsy six hours after death. "On laying open the abdomen, the uterus and a fœtal head, larger than at term, were brought to our view. The head resting just below the navel, and on the left side of the body; it was firmly attached to the uterus and intestines. After removing the head, we saw a decayed mass, but could not discover what it was. All the bones of the fœtal head were present, with the exception of the superior and inferior maxillaries. On opening the head, we could see the brain and all its divisions. The uterus was about ten inches long, about four inches wide, and four thick, forming one hard bony mass, weighing six or eight pounds."—(*Oglethorpe Medical and Surgical Journal,* August, 1858, p. 138.)

Case of Tubal Pregnancy, with Rupture and Death. By G. G. STEELE, M.D., Huntsville, Alabama.—The following brief history of a very interesting case was communicated to Professor Pope, by the author, in a letter not designed for publication: "I sent you yesterday by express, a pathological specimen, which, I hope, will be an acceptable addition to your museum. It is a case of tubal fœtation, taken from a servant-woman of about twenty-six or twenty-eight years of age, and of unusual good health, (second pregnancy;) first child eight or ten years old; married a second time about two months since. Two weeks prior to her death, she missed her courses for the first time, and suffered no pain up to the night of the seventeenth, when she was taken with severe pain of the abdomen, which was supposed to be bilious colic, and for such treated by the family. The next day, about ten or eleven o'clock, I saw her, when she said she was better; I found, however, her pulse small, quick, and feeble, and still complaining of a pain of a spasmodic character over the whole abdomen; but as she said, not near so bad as the night before, I was at a loss to make out what it was, or to form a diagnosis. I ordered some brandy-toddy, warm applications to the abdomen, and a warm enema. She died suddenly about an hour after my seeing her. I was so shocked by the suddenness of her death, that I could form no opinion as to its cause; and it was not until that night after going to bed, and carefully reviewing all the symptoms, that I could settle upon an opinion; I am glad to say that opinion was correct, and I expressed my belief to the other physicians before going to make the examination, that it was tubal pregnancy, with rupture. This opinion, or diagnosis, was formed by exclusion; by seeing what it was *not*, I must candidly acknowledge that it was but a good guess. On opening the cavity of the abdomen, I found effused about a gallon and a half of blood; that in the pelvic cavity was coagulated, in removing which I found an embryo of about six weeks, lying near the rupture in the tube, which was about midway. The embryo, with the uterus and appendages, I inclosed, but fear it will be destroyed before reaching you. I am fully persuaded that this accident can happen oftener than is supposed. Unless hemorrhage is severe, recovery could easily take place without producing any subsequent alarming symptoms. In the present case, death was the result of hemorrhage. I can see no reason why fatal, or even severe hemorrhage, should always follow. It is only after an autopsy that the diagnosis is made out, and as this does not often occur, the accident is considered one of rare occurrence."—(*St. Louis Medical and Surgical Journal*, November, 1858, p. 568.)

The author's suggestion that this accident may occur more frequently than is generally supposed, and that the woman may often recover where the hemorrhage is slight, without any violent symptoms, we think very rational.

Report of a Case of Extraction of the Bones of a Fœtus from the Peritoneal Cavity, after having been there over Four Years. By D. W. YOUNG, M.D., Aurora, Illinois.—This case is extremely interesting, from the fact that the lady became pregnant twice, carried her children to full term, and was delivered of two fine healthy infants, carrying at the same time, a child at full term encysted in the cavity of the peritoneum. On the 17th of August, 1855, Dr. Young was called to attend a robust German lady, residing near the city. She was delivered, without difficulty, of a fine, well-formed male child. After all was over, the lady directed his attention to a tumor in her right side, situated in the iliac region, which she informed him had been there for something over four years, and gave the following history of its commencement: "While still residing in Germany, she became, as she supposed, pregnant for the first time; that she enjoyed pretty good health during the first six months of gestation, but during the latter three months, she suffered a good deal of pain in her right side. At the expected time for her confinement, pains came on, and she and her friends supposed that labor had really commenced, and accordingly called their midwife, who came, and after repeated examinations, expressed her fears 'that the child did not lie right,' as she could not reach it, and as it did not advance properly notwithstanding the severe pains. Her pains continued and increased, until, she says, something burst, and discharged a large quantity of water and bloody matter, together with clots of coagulated blood, after which the pains ceased; the tumor diminished in size and moved higher up, and further to the right side. The final conclusion with them was, that she had only suffered from obstructed menstruation which had now been relieved. The lochial discharge continued for two or three weeks, during which time the tumor also diminished somewhat in size. Finally the lochial discharge ceased, leaving the present tumor, which to all appearance has remained dormant up to this time.

"She afterwards consulted a surgeon about the tumor, who said he thought it was a disease of the ovary, which as long as it did not trouble her very much, she had better leave untouched. She soon again became pregnant, and in due time was delivered of a healthy child. Parturition was natural and easy, and she soon regained her usual degree of health, having experienced nothing different from other parturient women, except an entire absence of the lacteal secretion. 'The tumor apparently remaining in the same dormant condition.'" Some two years subsequently, she again became pregnant, when she came under the care of Dr. Young, who delivered her, August, 1855, of a fine healthy child. "The labor uncomplicated and easy." Dr. Young thus describes the termination of this case:—

"I heard nothing more of Mrs. Yomgels, until the 1st of May, 1856, when her husband called upon me at my office, to consult me in relation to his wife, who, he said, was very poorly. He informed me that some time after her confinement, she was attacked with chills and fever, and that as his friend, A. W. Heise, M.D., a very eminent German physician and surgeon, from Addison, Du Page County, Illinois, was in the neighborhood, he called him to prescribe for his wife. Notwithstanding the medicine, the chills and fever continued; the tumor became painful, inflamed, and finally opened, and discharged several small bones, one of which he exhibited, and I pronounced it to be the fibula of the right side. He said that he had that day written to Dr. Heise, requesting him to visit his wife immediately, and desired that I would see her with him when he came. I promised, and he returned home. On the 5th of May, 1856, I was summoned to meet Dr. Heise in consultation, who was then waiting at her house. At my request, Dr. P. A. Allaire, of this city, was also called to examine the case in consultation. The patient was much emaciated, and seemed suffering from hectic fever and severe night-sweats, together with extreme nervous prostration. The tumor near the umbilicus was ulcerated, and discharging a most terribly offensive matter. After due consultation, and, at the earnest solicitation of the patient, an operation was decided upon, notwithstanding her extreme emaciation and feebleness. Accordingly I put the patient thoroughly under the influence of chloroform, when the operator, Dr. Heise, proceeded, with a groved director and bistoury, to make an incision of some inch or two toward the right side, and with a long pair of forceps commenced to extract the bones. The bones of the head and pelvis were too large to pass through the small orifice, which seemed as large as we dare make for fear of cutting beyond the adhesions of the sack and peritoneum, consequently they were broken up with a strong pair of scissors. Drs. Heise and Allaire took turns in operating, and were full two hours in removing all the bones and cleansing the sac. The chloroform acted so admirably, that when the operation terminated, and she was permitted to come from under its influence, she expressed herself as feeling decidedly better.

"The sac was firm, dense, and so tough, as almost to resist the edge of the scalpel, and was contracted closely around the bones. After the operation, the dressing consisted of a simple broad bandage around the abdomen, with directions that she be kept on her side, so as to facilitate the discharge from the wound." This case progressed favorably for four or five days, when the author discovered that nearly all the fæces passed by the wound, and through the orifice of the sac; this formidable complication was combated by compresses and bandages, and soon disappeared; she rapidly improved under the use of tonics and nutritious diet, and Dr. Young had the satisfaction of discharging her perfectly cured at the end of four months.

Our own impression is, that this was a case of rupture of the womb, and not of extra uterine pregnancy. The patient feeling something give way during her pains and the escape of blood and clots from the vagina at the same time, seem to favor this opinion; how the woman escaped death from violent peritonitis, is very remarkable.—(*From the Chicago Medical Journal*, August, 1858, p. 383.)

Rupture of the Uterus during Labor. By M. F. BROWN, M.D., Hannibal, MISSOURI.—This was the case of a young negress, who, during her first pregnancy, complained to the doctor of a tumor, which appeared externally at the vulva. Upon making an examination, he found it to be the neck of the womb "enormously elongated."

She was kept in a recumbent position, until labor came on; the pains were severe, and the vertex of the child appeared externally, covered by the neck of the womb, unyielding, but much attenuated. "At length, during a sharp pain, the neck of the womb gave way in a straight longitudinal laceration on the left side, extending up to the body of the organ, but not high enough to penetrate the peritoneal cavity." After the placenta came away, the torn edges of the neck of the womb could still be drawn down beyond the external genitals. "No unusual hemorrhage followed." The patient appears to have been treated with great prudence and faithfulness, making a rapid recovery, without a single unfavorable symptom.

The doctor writes: "The edges of the laceration were united by granulation, and the neck of the womb appears to be in the natural position. The woman, at this time, thirty-two days after the accident, is going about attending to her ordinary duties, and is evidently in the enjoyment of most perfect health."—(*St. Louis Medical and Surgical Journal*, January, 1858, p. 39.)

Report of a Case of Monstrosity. By J. E. G. TERRILL, M.D., Greenville, Georgia.—This woman, a negress, was threatened with abortion, (at what period of time, before full term, the reporter does not state;) by treatment the accident was prevented, and she afterwards was able to attend to her duties on the farm. May the fifth, she was delivered without difficulty of a singularly formed child, the description of which we quote from Dr. Terrill's report: "The head is regularly formed, with quite a sufficiency of hair; so are the upper extremities and chest. The abdominal walls are wanting, with the exception of a small space above the pubes; the liver and intestines are exposed fully to view, hanging loosely, and retained in situ by the reflections of the peritoneum; the lower extremities are reversed: they fold upon the back instead of the abdomen. The anterior portions are in this case the posterior portions of the legs; the os calcis is in front, the toes pointing backward; the great toes are upon the outside of the feet; the feet are flat, being made so doubtless by their position upon the occiput while in utero. No signs of genitals, either male or female; the parts are perfectly smooth. The anus is above the os pubis, just below the margin that surrounds the viscera of the abdomen. The bladder is not visible, and the spine is considerably distorted. The child's weight is about seven pounds; it was still-born. I have not made any dissection, as I wish to preserve the specimen and present it to the Museum of the Atlanta Medical College."—(*Atlanta Medical and Surgical Journal*, July, 1858, p. 651.)

Difficult Labor; Monster Craniotomy without Instruments. By N. L. NORTH, M.D., Brooklyn, New York, Consulting Physician to the Williamsburg Dispensary, etc.—This woman, Mary McVey, had been in labor many hours, was consumptive, and in a sinking condition. The forceps were applied and easily locked, but the head was so soft, that upon traction they continually slipped. Dr. North did not think it advisable to wait for the arrival of craniotomy instruments, but by pressing the scalp against the edge of one of the parietal bones, contrived to make it cut through the integuments and muscle, when an enormous quantity of sanguino-serous fluid escaped with a gush, the head collapsed, and the child was born without further trouble. The mother recovered without an untoward symptom. "The child was a rare sight. It had a double harelip. With the exception of two slight prominences just above the angles of the mouth, the whole middle portion of the upper jaw, to the malar bones each way, and the whole of the roof of the mouth and the septum nasi, were wanting; the nose itself looked like the upper lip, except a slight cartilaginous protuberance in the centre, seeming to be an attempt at the formation of the septum nasi. The size of the head, as near as we could calculate, (it being emptied of its contents,) was as follows: occipito-mental, ten inches; occipito-frontal, eight and a half inches; biparietal, six and a half inches; cervico-bregmatic, five inches."—(*Buffalo Medical Journal and Monthly Review*, August, 1858, p. 149.)

Two Fœtuses United Face to Face—from the Umbilicus to the Upper Part of the Sternum.—This case is reported by J. B. S. JACKSON, M.D., Boston, who obtained the specimen for dissection, and an account of the labor from Dr. D. J. Perly, Old Town, a few miles from Bangor. We shall not attempt to quote Dr. Perly's description of the labor, which was difficult and dangerous, and appears to have been extremely well managed. There was but one placenta and one cord, until within about two inches of the fœtal abdomen, where it bifurcated to supply each of the children. The cord pulsated strongly, and both children were alive at birth, but animation soon ceased. Dr. Jackson gives a description of his dissection, with the size and relative position of the different organs. It is highly interesting, but we regret that our limited space prevents our making extracts.—(*Boston Medical and Surgical Journal*, June, 1858, p. 274.)

Account of a Monster of the Genus Peracephalus. Read before the Philadelphia Biological Society, March 1st, 1858, by WALTER ATLEE, M.D.—"This monster was the product of a double gestation, the mother being delivered at seven months. The child born first lived fifty-five hours; it was a female, and perfect, with the exception of one club-foot: the other monster came away about twenty minutes afterwards. One placenta was common to both. The mother was a healthy woman, who had previously borne three children in as many confinements. In the first two pregnancies the children were females, and born at seven months; in the third the child was male, and born at eight months and a half. The woman had received, as far as is known, no fall or fright in the course of her pregnancy. The monster has no head or upper extremities. The trunk and lower extremities are of a size corresponding to those of a well-formed fœtus of seven months. A want of perfect symmetry, however, is very manifest in the two halves of the trunk, which is remarkable for a number of elevations and depressions between them. These elevations are due to the accumulation of a great quantity of cellular tissue. This sort of lumpy condition exists, likewise, in the lower limbs, which present, in addition, several other imperfections. The feet are turned inward, and they possess but four toes, two of which, the smallest, on one foot are not separated. The external organs of generation are those of the female; the anus exists upon the front of the trunk; between the umbilicus and its upper extremity is something like the appearance of a small empty bag or bladder, attached by a rather narrow pedicle. Both above and below this bag is a small tuft of hair. Toward the sides of the thorax, in the places usually occupied by the nipples, are small round holes.

"For the sake of preserving the original appearance of this monster, which was deposited in the collection of the Biological Society of this city, the examination made of its internal structure was very limited; it was confined, in fact, to an examination of the spinal column. The sacrum was found to have its concavity looking backward; the lumbar vertebræ are five in number, and the dorsal twelve; at the commencement of the cervical region the spine is bent forward and downward, and it leads by a chain of small, rudimentary bones, imperfectly formed, but evident rudiments of vertebræ and a cranium, to the empty bag, mentioned as existing in the front of the thorax. The existence of a few hairs on this place, rudiments of the hairy scalp, had already foretold, what a slight dissection has sufficed to prove, as to the termination of the vertebral column.

"According to the usually adopted classification of Geoffroy St. Hiliare, this monster is one of the genus peracephalus, from the greek περα, beyond or further than, being prefixed to acephalus, to mark a still greater deformity, the thoracic members being absent as well as the head. Hilaire states that about fifty cases of this form of monstrosity have been recorded, and that, from their examination, it appears that generally they are not born of women in labor for the first time; delivery takes place from the sixth to the eighth month; the gestation is double; the placenta is common to both children. The other child is well formed; the sex is the same; and the acephalic child is almost never born first. All these circumstances, said by St. Hilaire to generally occur, have been noticed in this instance, as already stated; the only exception being that in this case the first child had a club-foot, instead of being well formed.

"As, for the sake of preserving the specimen, the dissection of this monster was not carried far, the principal modifications of the internal organization found in these cases will be given as they are stated by St. Hilaire. As in every other point his statements correspond to what occurred, and was found in this case, there is no reason to doubt that they would also correspond to what would be found were the dissection completed."

The author then gives a condensed account of M. St. Hilaire's description of the internal organizations of these monsters, and winds up with some very just remarks on the science of embryogeny.—(*The American Journal of the Medical Sciences*, April, 1858, p. 370.)

My First Case of Placenta Prœvia. By JOHN H. GRANT, M.D., Conwayborough, South Carolina.—Dr. Grant found this patient in a very miserable condition; she told him she had been flooding, off and on, for six weeks; supposed herself seven months advanced. The case is thus described: "Upon making a per-vaginal examination, the os uteri was found sufficiently dilated to admit of the operation of turning; the head of the child occupied the cervix and os uteri; the after-birth was readily recognized, intervening between the head and cervix uteri; it extended around the whole circumference of the os, excepting a space of about fifty or sixty degrees. At some points the edge of the placenta could be felt projecting an inch or more into the vagina." Delivery was attempted by turning, but the woman resisted violently, and the operation was abandoned. She continued in this state for three days, when labor commenced, and in about sixteen hours the child was born, perfectly exsanguined, exhibiting no signs of life; no hemorrhage occurred after the expulsion of the fœtus. The doctor observes: "I have no doubt that this case would have done well under the use of ergot, and the child would have been born sooner than it was; but as the pressure of the head, and the remedial means adopted arrested the hemorrhage, I thought it best to let well alone." A week after the birth of her child this lady was attacked with phlegmasia dolens; the right extremity was first affected, and as the swelling subsided the left enlarged in the same manner, and went through the same process. "The patient slowly but perfectly recovered." —(*Charleston Medical Journal and Review*, March, 1858, p. 183.)

Adhesion of the Placenta. By JOHN W. JONES, M.D., Professor of Principles and Practice of Medicine in the Atlanta Medical College, Atlanta, Georgia. —In this case, the reporter, Dr. Jones, found that after the most careful and persevering manipulation, he could bring away only about a third of the placenta; finding it thus adherent, he resolved to leave its separation and expulsion to the efforts of nature; accordingly, in three days it came away, and the woman made a good recovery.

The treatment appears to have been very judicious, but as it contains no novelty, we do not report it.—(*Atlanta Medical and Surgical Journal*, March, 1858, page 386.)

On some of the Causes of Puerperal Convulsions. By RALPH N. ISHAM, M.D., Chicago, Illinois.—This is an interesting article on the causes of puerperal convulsions, and particularly discusses the relation of albuminuria to puerperal eclampsia. "Fifteen years ago, Dr. John C. W. Lever called the attention of the profession to the important fact, that in puerperal convulsions the urine is proved to be albuminous; since that time, by more careful analysis of cases and accumulated evidence, through the observations of Simpson, Dubois, Cazeaux, Blot, Frerichs, and many others, the coincidence of the albuminous urine with eclampsia is now fully established and undisputed; and no well-observed cases show this state of the urine to have been absent. In over fifty per cent. of fatal cases of convulsions, when autopsies have been made, undoubted Bright's disease has been found, which has led to a series of investigations by Frerichs, Braun, Litzmann, and others, who strenuously maintain the identy of uræmic intoxication in acute Bright's disease and puerperal eclampsia; among the proofs of which are the following:—

1st. The same precursory symptoms of which œdema is the most frequent.

2d. The same renal lesions are found after death in eclampsia and Bright's disease.

3d. The identity of the convulsions, and the fact that males may be subject to them in morbus Brightii.

4th. The two diseases are always accompanied by albuminuria.

5th. Bright's disease, as well as eclampsia, sometimes exists without the presence of œdema."

Dr. Isham quotes several cases to sustain the truth of these positions, but we cannot, without neglecting others, afford him more space.—(*Chicago Medical Journal*, October, 1858, p. 486.)

Puerperal Convulsions from Gastric Irritation. By J. LEVERGOOD, M.D., Wrightsville, Pennsylvania.—Gastric irritation, it has been conceded, sometimes will occasion puerperal convulsions, and the following case exemplifies the fact. This patient had eaten a small piece of raw turnip, which produced violent gastric uneasiness, terminating in convulsions. Upon consultation, it was determined to let the labor take its natural course, on the ground that "a meddlesome midwifery is bad." The result justified the course pursued, for in a short time the uterus contracted, and expelled a still-born male child. The convulsions continued for two days, and a slow recovery took place, a most rigid antiphlogistic treatment having been employed.—(*The North American Medico-Chirurgical Review*, March, 1858, p. 310.)

A Case of Impregnation without Rupture of the Hymen. By HOWARD SMITH, M.D., Professor of Materia Medica, New Orleans School of Medicine.—In this case, Professor Smith was called upon to attend a lady in her first confinement, whose husband assured him that there was some obstruction in the vagina; an examination was attempted, but the parts were so sensitive that the operation was an impossibility. Dr. Smith then put the patient fully under the use of chloroform, by which means he contrived to make a vaginal exploration, and ascertained that the only obstruction which existed was an unusually dense hymen.

Her labor came on naturally, but slowly, as was to be expected in a first accouchement.

"The pain which delivered the head was very severe, and I distinctly felt the hymen rupture as the head escaped into the world; the rest of her labor presented nothing of importance. She recovered without a bad symptom, without fever, and with no tearing either of perineum or walls of the vagina."

The author is aware of the fact that he may be suspected of having mistaken the fourchette for the hymen, but such an error, he says, was impossible, for the hymen was not a narrow band, but broad, thick, and nearly closing the orifice of the vagina. Had the parts not been so tender, it would have been a simple operation to divide this membrane; but, under the circumstances of the case, it was impossible. This excessive sensitiveness appears to have been purely nervous, for "there was no inflammation of the mucous membrane, and there never had been."—*New Orleans Medical News and Hospital Gazette*, June, 1858, p. 217.)

Abuse of the Pessary. By J. S. WEATHERLY, M.D., Montgomery, Alabama.—Dr. Weatherly thinks that the use of the pessary has been even more abused than that of the speculum. After speaking generally of the pessary, and the irritation it often produces in the mucous membrane of the vagina, he says that the pessary, so far from curing prolapsus uteri, if such really exists, "aggravates all the symptoms."

The doctor proceeds thus: "Though the pessary, in some few cases, is no doubt a valuable adjunct in the treatment of prolapsus, I doubt very much whether it ever cures a case. When I first commenced the practice of my profession, I thought I had, or would have frequent use for this little instrument; consequently, I procured a fine assortment, and, as a matter of course, I used them as often as I thought a case would admit of one, and probably much oftener than was really necessary. But, after studying more particularly the nature of uterine and vaginal diseases, I found that their use was rarely indicated, and that I could treat the majority of cases much more satisfactorily, to myself and patients, without them. Again, I found that it was almost impossible to keep one of them adjusted in the vagina of any negro woman; their duties are such, generally, as to make it very difficult, even if they tried, to retain them in situ." Dr. Weatherly says that among higher classes of patients, whose sedentary habits predispose them to uterine derangements, prolapsus, when it exists, is treated by him more as a symptom than as a disease, per se, and says: "We can cure it by remedying the engorgement or ulceration, if it exist; not, however, by introducing a pessary, and sending our patients to bed, but by using rational means for subduing the disease, and giving tone to the relaxed tissues."—(*Atlanta Medical and Surgical Journal*, June, 1858, p. 590.)

Complicated Case of Obstetrics. By B. T. SMITH, M.D., Central Institute, Alabama.—Mrs. —— had been in labor twelve hours, when she sent for Dr. Smith. The membranes were still entire, but on examination he detected the cord by its pulsations, and from the general character of the case felt some fear of a placental presentation. On passing his finger up a second time, the waters broke, and he thus found that the head of the child and the placenta were presenting together; fortunately, the pains were but slight, and by pressing the placenta upward he managed to retain it above the superior strait until the head took full possession, and in about forty minutes the child was born. But the great difficulty in this case arose from the fact that it was found to be impossible to bring away the placenta. The doctor describes it as follows: "I introduced my hand, and found the uterus pretty closely drawn upon the placenta; I grasped the body, and expected to have my hand and it thrust out together. But judge of my disappointment—it refused to come or even yield; I could have torn it to pieces, but I did not wish to do this. It was firmly attached to the cervix, by what seemed to me a cartilaginous adhesion." After many efforts, Dr. Smith resolved to wait an hour or two for the woman's sake, as well as for his own, for he was completely exhausted. After this, large doses of ergot and biborate of soda were administered, in hope that the strong efforts of the uterus might overcome the adhesions. In four hours, powerful efforts were produced, and during one of these throes, "amounting almost to convulsion, the adhesions gave way, and the placenta was cast out."

The nurse officiously disposed of the after-birth while the doctor was busy with his patient, and thus the nature of the adhesions could not be critically made out. The woman speedily recovered. It may be observed that the absence of hemorrhage in this case was both curious and fortunate.—(*Atlanta Medical and Surgical Journal*, June, 1858, p. 593.)

Puerperal Apoplectic Convulsions, with Spontaneous Expulsion of the Fœtus after Death. By BENJAMIN FESSENDEN, M.D., Plymouth, North Carolina.—In this case the child was expelled from the uterus the day after the death of the mother.—(*Medical Journal of North Carolina*, October, 1858, p. 161.)

Case of Placenta Prœvia; Central Presentation; Safe Delivery. By RICHARD M. CURREY, M.D., Knoxville, Tennessee, Professor of Medical Chemistry in Shelby Medical College, Nashville.—This patient was in imminent danger from profuse flooding, when the doctor, during a severe pain, perforated the placenta within half an inch of the umbilical cord, the waters escaped, and the flooding ceased. A large dose of ergot was administered, and the child was speedily born. The treatment consisted mainly in the application of cold, and keeping the woman in a recumbent position. The application of the tampon was attempted in the early stage, before the os uteri was sufficiently dilated to admit of active manipulation, but could not be effected (why is not stated.) Both mother and child (a rare circumstance in such cases) survived and did well.

Dr. Currey says that he believes the success of this case was owing to its being left to nature after the presenting placenta was ruptured.—(*Atlanta Medical and Surgical Journal*, October, 1858, p. 109.)

Uterine Hemorrhage from Hour-glass Contraction after the Expulsion of the Placenta. By F. A. STANLEY, M.D., Winthrop.—Dr. Stanley gives four cases of this accident, in all of which he succeeded in bringing away the placenta, and producing regular contractions of the womb by the free administration of opium, and careful dilatation of the spasmodic contraction.—(*The Maine Medical and Surgical Reporter*, October, 1858, p. 197.)

Case of Unusually Large Development of the Human Fœtus. By CHARLES A. BUDD, M.D., Lecturer on Obstetrics in the New York Medical College, Fellow of the New York Academy of Medicine, etc.—This child measured twenty-three inches in length, weight (without the brain, for it could not be delivered without perforating the head,) a trifle over twelve pounds.—(*American Medical Monthly*, March, 1858, p. 192.)

Fibrous Tumor of the Uterus Complicating Labor. Reported by J. N. KIRKPATRICK, M.D., of Randolph County, Arkansas.—In 1857 this lady was delivered safely of a living child, but after labor, the placenta being expelled, a large fleshy substance was found hanging down between her thighs when a midwife in attendance sent for a physician, who pronounced it the inverted uterus, that it was very much swelled, and that as soon as he could get the swelling reduced, "he would put it back." She continued in this state for two months, miserably emaciated, perfectly anæmic, and completely bed-ridden. The doctor and her friends gave her up as a dying person. Dr. Kirkpatrick was now sent for, and on making an examination, found the womb in its natural position, and that this fleshy substance was a large polypus. "It was as large as a full-sized cocoanut, of a conical shape, and attached to the mouth of the womb by a narrow neck or pedicle." Dr. Kirkpatrick immediately removed it in one mass, by cutting this pedicle near its attachment. It bled but very little, and weighed nearly three pounds. By means of tonics, chalybeates, nourishing diet, and moderate exercise, the patient rapidly recovered.

The necessity of a thorough examination is in this case fully exemplified.—(*St. Louis Medical and Surgical Journal*, July, 1858, p. 295.)

Anatomy of the Placenta. By JOHN C. DALTON, M.D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons of New York.—The object of this paper is to demonstrate, by positive evidence, some points in the anatomy of the placenta which are still in dispute. It is well worthy of attention, but an analysis would occupy too much space.—(*American Medical Monthly*, July, 1858, p. 1.)

An Inquiry into the Modern Doctrines regarding the Frequency, Importance, Pathology, and Treatment of Abrasions, Excoriations, and Ulcerations of the Os and Cervix Uteri. By DANIEL MCRUER, M.D., Bangor, Maine.—(*The Maine Medical and Surgical Reporter*, September, 1858, p. 163.)

Removal of the Placenta in the Early Months of Pregnancy by Evulsion. By O. C. GIBBS, M.D., Frewsburg, New York.—(*American Medical Monthly*, New York, December, 1858, p. 400.)

Report of a Case of Extraction of a Living Child, by Turning, after the Death of the Mother; with Remarks. By G. W. THORNTON, M.D., Newport, Kentucky. Read before the Newport and Covington Medical Society.—(*Cincinnati Lancet and Observer*, February, 1858, p. 65.)

In this case the child was turned and extracted forty-five minutes after the mother had ceased to breathe; it lived three weeks and two days. This result illustrates the propriety, indeed the absolute necessity on such occasions, of immediate delivery. The judicious promptitude of Dr. Thornton was highly creditable.

Remarkable Cases in Midwifery. By GEORGE SHEDO, M.D., Denmark, Iowa.—(*American Journal of the Medical Sciences*, October, 1858, p. 341.)

"*Meddlesome Midwifery is Bad*,"—(BLUNDELL.) A dissertation read before the New London County Medical Society. By ISAAC G. PORTER, M.D., New London, Connecticut.—This excellent paper is full of sound practical sense, and should be read not only by all young practitioners, but by a great many old ones. It treats of the abuse of the tampon in cases of threatened abortion; of unnecessary bleeding in pregnancy; of converting one presentation of the head into another; rupturing the membranes to expedite labor, when no such interference is called for; mechanical irritation of the os uteri, another means often rashly used to promote relaxation; and quotes the following passage from Churchill: "Delay in the first stage of labor involves very little, if any danger, however tedious it may be, for the stress or strain comes on parts where it can safely be borne; but delay in the second stage is very different. The nervous shock is never in proportion to the first stage, but to the second." Dr. Porter explains that these different manipulations may, under circumstances, all be useful, and closes his dissertation with the following remark: "Omitting, for want of time, the discussion of other topics involving meddlesome interference in practice, such as the use of forceps and of ergot, retained placenta, and placental presentations, we only add, in conclusion, that in the foregoing remarks we have advised the *cautious use* of the tampon in abortion, not, of course, its disuse; we have spoken of *unnecessary* venesection in pregnancy, not denying that it is often proper; we have dissuaded from unnecessarily converting one presentation into another, not affirming but that it may be imperiously demanded in some cases. The same is true in regard to rupturing the membranes, to the management of nates presentations, and to the excited dilatation of the os uteri. It is not the *use* of measures, (often proper,) that we have objected to, but the *abuse*. Knowledge alone can guide us when and how to act."—(*Ibid.*, p. 345.)

Midwifery Cases. By Richard McSherry, M.D., Baltimore.—This article comprises two cases: one of cancer of the womb, with unyielding os uteri, in which the bones of the head were removed in detached pieces; the body was brought down without much trouble; child putrid. The other case is one of spontaneous hemorrhage in a new-born infant, resulting in death. The doctor was called to see it a few hours after birth, and found it dead. Upon turning it on its face, there flowed from its mouth a discharge of thin blood, or bloody serum. In considering the cause of this hemorrhage, Dr. McSherry attributes it to the condition of the mother, who had lived for upwards of two years in an enervating climate, at a barren and desolate outpost, (her husband was an officer,) where the troops, officers and men, subsisted on the army rations; the food was too coarse for her, and she lived almost exclusively on bread and butter, and water, and none of these of the best. "Viewing all the facts, I considered that the child died of scurvy; and in fact, upon inquiry, I found that both officers and men had experienced something of that disease at the same station."—(*Ibid.*, p. 352.)

Placenta Prœvia. By J. P. Terrell, M.D., Illinois.—The placenta in this case presented directly over the os uteri, which was dilated only to the size of a fifty-cent piece, and the flooding so continuous and alarming, that the doctor resolved to separate the placenta entirely from the womb; this he accomplished, at the same time rupturing the membranes. The result was fortunate; the pains came on with vigor, the placenta was pushed on one side, as much as possible, and the child's head became rapidly engaged in the orifice of the womb, and (no doubt by the pressure it exerted) stopped the hemorrhage. The woman continued all night in labor, the continued rigidity of the os causing delay; fortunately, in the course of the day it relaxed; the hemorrhage, still more fortunately, did not return, and near twelve o'clock p.m., with the aid of the forceps, she was delivered. The child was dead, (as might be expected, after such severe flooding,) but the mother recovered, and is now enjoying excellent health.—(*The Chicago Medical Journal*, July, 1858, p. 297.)

Cases of Uterine Disease. Read before the Boston Society for Medical Observation, and communicated for the *Boston Medical and Surgical Journal.* By Francis Minot, M.D.—Three cases are here given to illustrate two different uterine diseases. "The first is one of constriction of the mouth of the womb and of the canal of its neck, accompanied by dysmenorrhœa, for which dilatation was performed, followed by considerable relief to the symptoms. The last two are examples of granular disease of the mucous membrane of the os uteri. One of these patients had prolapsus uteri, leucorrhœa, and the train of general symptoms usually accompanying that condition; she was entirely restored after a course of treatment consisting chiefly of astringent applications to the cervix, and continued for upwards of three months. The principal symptom presented by the other patient was menorrhagia; the case is adduced chiefly to show the advantage derived from the early treatment of the disease."—(*The Boston Medical and Surgical Journal*, September, 1858, p. 9.)

An Essay on the Physiology of Menstruation. By EBEN HILLYER, M.D., Rome, Georgia. Read before the Medical Society of the State of Georgia, at the annual meeting in Madison, and ordered to be printed, April, 1858.—(*Southern Medical and Surgical Journal*, December, 1858, p. 798.)

Puerperal Fever. By J. A. WINDLE, M.D., Blountsville, Indiana.—(*Cincinnati Lancet and Observer*, August, 1858, p. 460.)

Remarks on the Employment of Pessaries, with the Description of a New Instrument (*with illustrations.*) By E. NOEGGERATH, M.D., New York.—That pessaries have by mismanagement, and their application to inappropriate cases, frequently done mischief and complicated the evils they were intended to counteract, is a fact which I believe few physicians who have seen much practice will deny; at the same time it is no less generally admitted that there are cases in which the pessary is not only of service, but actually necessary to a cure. Dr. Noeggerath is decidedly of this opinion, and before describing the new instrument recommended by him, thus points out the cases which he considers as imperatively demanding the use of the pessary:—

"1st. Prolapsus in that portion of society, where it is most commonly met with, viz., in poor women, who have neither time nor means to undergo a complicated course of medical treatment.

"2d. Prolapsus of a very long standing, where the causes may be removed by careful management, while their effect upon the falling of the womb, resists every other means.

"3d. Those cases of prolapsus, not unfrequently seen even in otherwise strong and healthy women, where the most thorough examination is unable to detect anything apart from the normal state besides a relaxation of all the apparatus supporting the womb. Admitting that a pessary is required in a given case, the important question occurs, what kind is to be chosen? The requisites of a good instrument are as follows: first, it must retain the womb in, or near its natural position; second, it must neither irritate the womb nor the vagina; third, it must not interfere with the patient's moving round, sitting, or the excretion of the urine or fæces; fourth, it must be composed of a substance which resists the corrosive influence of the secretions from the genitals; fifth, it must be so constructed as to be easily introduced and removed by the patient herself; sixth, it must be as cheap as possible."

Having thus, as it were, introduced the describer, our space will only admit of our giving a brief account of the nature of the instrument.

"Dr. Zwank, of Hamburg, published an instrument in 1853, which he called a hysterophor. It consists of two ovoid thin pieces of metal, covered with India-rubber or of wood, connected on one end by a joint; in the neighborhood of this joint, on the external sides of the wings, is a metallic pin on each side, two inches long, which can be screwed together at the lower end. (Figures are given in the original paper, to assist the reader in comprehending the mechanism of the instrument.) In applying the instrument, the wings are approached as much as possible, and introduced so that its convex portion is turned toward the sacrum and pushed upward as high as possible, toward the anterior portion of the laquear vaginæ, in front of the cervix uteri. Afterwards the lower ends of the metallic handles are compressed, and fastened by the screw. (See Figure 3 in the original.) In this position the instrument is retained by itself.

"About the same time, Dr. Schilling, of Munich, invented quite a similar instrument to that of Zwank, the only difference being that the movement of the wings is effected and can be regulated by the screw at the lower end."

The author states that these instruments are superior in every way to any yet invented, but still they have some disadvantages owing to the substance of which they are composed. "The greater number of them as now in use being covered with a coat of vulcanized India-rubber, the discharges of the vagina destroy it in a very short time. After this has been done, the metallic portions begin to rust and decay, thus irritating the vulva; the furrows of the screw at the lower end begin to crust, or the screw, if turned too firmly, cannot be untwisted. In order to avoid these inconveniences, Dr. Eulenburgh, of Coblenz, modified Dr. Zwank's pessary, and described his instrument in a short thesis in 1857. It is made entirely of boxwood, and its wings are a little differently shaped, viz.: they are slightly curved downward at both ends, so that the lower side forms a concave surface. In consequence of this shape, the lateral branches closely adapt themselves to the inner surface of the descending ramus of the pubis, thus presenting a kind of hook, which gives a strong hold to the instrument when in the vagina. Both wings move in the centre part by two joints, thus leaving a hole in the middle, through which the secretions of the vagina are allowed to escape. Instead of the screw, Dr. Eulenburgh perfected the opening and shutting of the wings, by means of an elastic India-rubber ring, which runs in a channel around the body of the hysterophor immediately below the two joints. (See Figures 4 and 5 in the original.) As every particle of metal is avoided, (except the small pin running through the joint,) and as the boxwood resists more than any other substance the corrosive influence of the vaginal discharges, it is lighter, will keep longer, and will cause less irritation than the other instruments.

"For my own part, I avoid the use of pessaries as much as possible. But I have under my care a number of cases, in which a pessary was the only remedial means justifiable. I have tried a great variety of them, and have now come to the conclusion, that Zwank's (or Eulenburgh's) hysterophor answers better the requisites of a good pessary than any other." The author asks practitioners to give it a fair trial.—(*The New York Journal of Medicine,* September, 1858, p. 198.)

Uterine Disease. By W. H. MILLER, M.D., Henderson, Kentucky.—Dr. Miller gives three cases of uterine disease, in which the lunar caustic was applied locally with great benefit. The symptoms of the three cases are very much alike, viz.: paleness, poverty of blood, capriciousness of appetite, constant pain in the back, burning pains in the groins, leucorrhœa, etc. All the cases were treated very much upon the same plan.

First case: Examination with the speculum discovered inflammation and ulceration; treated with nitrate of silver to the neck of the womb inside and out; internally, she was put upon the use of iron, tonics, etc.; was perfectly relieved; afterwards became pregnant, and was delivered of a healthy child at full term.

Second case was that of a very delicate woman, predisposed to consumption. Examination discovered abrasion and ulceration of the os uteri, which was cauterized five times, at intervals of five or six days; absolute rest was enjoined, tonics prescribed, along with emollient injections of flaxseed. "This lady has since conceived, but is not yet delivered."

The third patient added to ulceration and inflammation, retroversion of the uterus. "Being satisfied that the retroversion was owing to the congestion of the body and the consequent increase in its weight, and having been taught that the best plan to cure it was to cure the inflammation, I scarified both lips freely, and cauterized the urinal canal; enjoined absolute rest, mild unirritating diet, emollient injections, and a tonic, consisting of infusion of colombo, of the U. S. Dispensatory, one ounce three times a day. In giving a history of these three cases, I do not suppose that I am communicating anything new, but only wish to bear the weight of my testimony and experience, limited as it is, to the value of the local treatment of these cases."—(*Nashville Journal of Medicine and Surgery*, September, 1858, p. 197.)

A New Uterine Elevator. By J. MARION SIMS, M.D., Surgeon to the Woman's Hospital, New York.—This (as stated by the author) is an improvement of Simpson's Sound, by making a joint or hinge in it near enough the end to prevent its striking against the fundus. In Dr. Simpson's hands, we do not question the safety of his instrument, but as a weapon for general use, we have always thought it somewhat dangerous. Dr. Sims describes his improvement, and illustrates with a wood-cut; it is worthy of attentive consideration.—(*The American Journal of the Medical Sciences*, January, 1858, p. 132.)

Cupping the Interior of the Uterus. By HORATIO R. STORER, M.D. Read before the Boston Society for Medical Observation, October 19, 1857.—This operation was performed by Dr. Storer, in two cases of amenorrhœa, for which every other means had been tried, and had failed. In both cases, the uterus was found under-sized and undeveloped.

In neither, however, was there any obstacle to the flow and free excretion from the uterine tissue. The author says: "They may each require an extension of the treatment, but its immediate and decided effect for good, both on the uterine system and general health, give hope that the improvement may prove permanent."

This operation was first proposed and apparently first practiced by Dr. Simpson, of Edinburgh, but we do not think that accounts have yet been published; therefore its success and safety remain to be proved. The author describes his instrument, which is a modification of Simpson's. He makes the following remarks: "I have used the cup in other cases than those reported, in every instance with the effect of reducing the sanguineous discharge, and I have never seen from it any permanently disagreeable result. Its power upon the nervous system is, however, at times so decided, that its use should be with care. In one case where the introduction of the instrument had been painless, the first play of the piston occasioned instant and alarmingly profound syncope."—(*The American Journal of the Medical Sciences*, January, 1858, p. 117.)

Ulceration of the Os Uteri. Read before the Cook County Medical Society, Chicago. By J. N. Graham, M.D.—This is a good paper, calling the attention of the profession to the great discrepancy in the different hospital reports of this malady, the difference of opinion as to the extent of the disease, and the treatment best adapted to its cure. "Statistics have been piled up before us to fortify whatever position was assumed or deemed to be right, without regard to the source from whence the material was taken."—(*The Chicago Medical Journal*, February, 1858, p. 70.)

Advantages of the Prone Position in examining the Fœtal Circulation as a Diagnostic Sign of Pregnancy. By W. Byford, M.D., Professor of Obstetrics in Rush Medical College.—"The fœtal heart," says Professor Byford, "may be heard to beat several weeks sooner by placing the woman on her face, with the abdomen pendent, than in the supine or erect position. In the prone position, with head lower down than the level of the feet, and the abdomen hanging freely down from the spinal column, the uterus rises out of the pelvis, and by its weight, keeps in close proximity to the anterior wall of the abdomen; and the fœtus being of greater specific gravity than the liquor amnii, will settle down on the most dependent part of the uterus. In this condition of things, the ear of the observer, or the end of the stethoscope, is placed against the lowest part of the uterine tumor, and pressed pretty firmly upward against it, and thus brought pretty close to the heart of the contained fœtus, nearer, in fact, than in any other position that can be assumed."

Would there not be some difficulty and inconvenience in placing the woman in such a position? We have a misgiving that the greater number of ladies of our acquaintance would object.—(*The Chicago Medical Journal*, February, 1858, p. 77.)

A Few Remarks upon Uterine Hemorrhage. By O. C. Gibbs, M.D., Frewsburg, New York.—The remarks in this paper are entirely confined to the treatment of passive uterine hemorrhage, apparently resulting from transudation of blood from the uterine walls in consequence of passive congestion and relaxation of fibre. Dr. Gibbs justly observes, such cases are often cured by the use of ergot, muriated tincture of iron, and astringent uterine injections; but in some cases of uterine hemorrhage, apparently resulting from some unnatural condition of the lining membrane of the uterus, Dr. Gibbs has found injections of tincture of iodine into the uterus, conjointly with the internal administration of iron and quinine, to work speedy cures.

"The tincture should be reduced with an equal quantity of water, to which a little iodide of potassium is added to prevent a deposit of pure iodine, which will sometimes result on the addition of water. The injection should be used every second or third day, two or three drachms being used at a time."

Dr. Henry Savage, of London, has reported two or three cases of menorrhagia cured by iodine injections, other means having been tried without effect.—(*The Cincinnati Lancet and Observer*, April, 1858, p. 213.)

Milk and its Adulterations. A paper read before the Cincinnati Academy of Medicine. By W. T. BROWN, M.D.—This paper has evidently been very carefully prepared, and contains much useful information with regard to the constituent elements of milk, and the effect produced upon these elements, to the destruction of their nutritious properties, by feeding cows upon distillery slops.—(*The Cincinnati Lancet and Observer*, October, 1858, p. 577.)

Case of Traumatic Occlusion of the Vagina. Read before the Cook County Medical Society, at its regular meeting, April, 1858. By ERNST SCHMIDT, M.D. The subject of this paper was a poor woman, who, in her first labor, became the victim of both mismanagement and neglect; the consequence was such a degree of laceration and destruction of the mucous membrane of the vagina that perfect occlusion took place; the menses were retained, and at every monthly period her sufferings were excruciating. Doctors, quacks, and midwives were called in, who, without making any examination, administered emmenagogues of the strongest kind, both internally and externally; her sufferings of course increased. At length, Drs. Schmidt and Wagner saw her, and having, by proper exploration, ascertained the nature of the case, determined to operate. The operation is described as follows:—

"The patient was laid across the bed in a position similar to that for the operation of lithotomy, and then anæsthetized. Dr. Wagner stood at her left side, the index finger of his left hand in the anus, and with the right hand holding a silver catheter lying in the bladder. I knelt down between her legs, brought the index of my left hand into the vagina like a probe, upon which I introduced a very fine-pointed and somewhat crooked tenotome with the edge upon the concave side, at an equal distance from the rectum and the catheter; I penetrated the vagina, and pressed the knife vigorously forward, about half an inch deep, till I felt that the resistance was yielding; then I dilated the opening externally by an incision about half an inch long, whereupon thick tarry blood commenced flowing out, and in this way indicated that the first success was attained."

This operation was successful; the woman recovered, is now in good health, and menstruates regularly. Dr. Schmidt expresses some degree of regret "that the constriction was not opened and widened so far as to lodge the cervix uteri in it as in another fundus vaginæ, and to cause a fastening of the cervix with the surface of the incision by adhesive inflammation;" but adds, he fears that such a proceeding would have produced a fatal peritonitis. Indeed, from the account of the case, it appears that the opening of the adhesions, so as to reach the os uteri and afford an egress to the incarcerated menstrual fluid, had nearly proved fatal. Should the woman become again pregnant, the important question arises, what will be the result? We should be inclined to fear, either a free incision of the vaginal stricture or dangerous laceration.—(*The Chicago Medical Journal*, May, 1858, p. 197.

Criminal Abortion.—In this journal, there is a full history of the movement which has lately taken place among the profession, both in Massachusetts and New Hampshire, for the purpose of checking, if possible, the continual perpetration of criminal abortion. It appears from the report, that many respectable people cannot realize the wickedness of this act, but have recourse to it as a convenient family arrangement. The following paragraph, which we quote from the report, is particularly refreshing: "We have in this city a woman engaged in the nefarious occupation of producing abortion, with whom our authorities are unwilling to meddle, on account of her popularity as a *devoutly pious* person."

This extract is from a journal of 1857. We have in every other case confined ourselves strictly to reporting for 1858; but there really is something so original and grotesque in the devoutly pious woman who lives by a systematic course of child murder, that we could not make up our mind to exclude it. It seems that piety, as well as charity, covereth a multitude of sins.—(*New Hampshire Journal of Medicine*, Manchester, July, 1857, p. 208.)

Description of a New Midwifery Forceps, having a Sliding Pivot to Prevent Compression of the Fœtal Head, with Cases. By GEORGE T. ELLIOT, JR., M.D.—The inventor of this forceps recommends it as a great improvement; and though we never ourselves found that compression or injury to the child's head was by any means a necessary consequence of the application of any well-constructed forceps, yet we have no doubt, that cases may arise in which Dr. Elliot's forceps might prove very useful. The doctor gives a full description of the instrument—length, breadth, thickness, etc., with illustrative woodcuts. We have no intention to describe the instrument, but refer our readers to the original paper.

To illustrate the immense power which may in some cases be required for delivery, Dr. Elliot gives us the following graphic account:—

"Called in consultation with Dr. Freeman, to Mrs. M., a twin, whose sister had died after her second difficult labor; this one, a primipara, twenty-six years of age, at full term, and had been in hard labor for eighteen hours. Second stage—os fully dilatable, soft parts cool, head presenting the second of Nægele, right occip. post., and wedged in superior straight after commencing rotation; no fœtal heart appreciable, but strong uterine soufflé; Simpson's forceps preceded by chloroform and baptism; tremendous tractions, until one blade straightened completely. Another pair; no better success. Perforator and crotchet now used; hard work. Finally replaced the forceps around the diminished head, and effected its delivery; tight work even with the breech."

This feat diminished the child's head; has it not annihilated Simpson's? We much fear it, and at the same time candidly admit, that we cannot altogether avoid the sin of envying the operator the possession of such heroic muscular force; two pairs of forceps straightened out!! Was there in this case no danger of *straightening out the patient?*—(*The New York Journal of Medicine*, September, 1858, p. 160.)

Case of a Mole, or False Conception Retained in Utero. By SAMUEL B. CLARK, M.D., Brothersville, Georgia.—This case is interesting, from the fact that the mole was retained in utero for full nine months; a very unusual circumstance.—(*Southern Medical and Surgical Journal*, August, 1858, p. 563.)

Obstetric Medicine. By W. P. MOORE, M.D., Linwood. Read before the Tennessee State Medical Society, April, 1858.—We have little space remaining, and therefore cannot give even a condensed statement of the contents of this paper. The following short paragraph we quote, because we think it full of sense and truth: "The authors on obstetricy are as varied in their articles as the cases with which we meet, and amid a description of the instruments which are thrown among us, the physician who forms his practice upon the great principles of medicine, and who is guided by the disclosures of nature, as the indications of the case, is astonished when he reads of the frequent use of the perforator, the difficulties in turning or the application of the forceps."—(*Nashville Journal of Medicine and Surgery*, July, 1858, p. 6.)

Bone in an Ovarian Tumor.—Dr. Woodward exhibited to the Pathological Society of Philadelphia some pieces of bone from a large ovarian cyst. The ovary in this case contained an extensive deposit of encephaloid, and the cyst contained also hair and fat.—(*North American Medico-Chirurgical Review*, January, 1858.)

Obstetrical and Medical Cases. By GEORGE T. ELLIOT, JR., M.D., Physician to Bellevue Hospital, the Nursery and Child's Hospital, and the Lying-in Asylum.—This is a long report of the different cases treated by Dr. Elliot in the Bellevue Hospital, and contains a great deal of interesting and useful matter.—(*The New York Journal of Medicine*, July, 1858, p. 37.)

A Case of Difficult Labor; the Child weighing Sixteen Pounds. By F. S. JAQUETT, M.D., Philadelphia.—This, we take it, is the largest new-born child recorded in the annals of Philadelphia obstetricy. Ramsbotham is stated to have delivered a woman of a child weighing sixteen and a half pounds avoirdupois, and Mr. Bloxam, in the *London Lancet*, describes a case where he brought a child into the world with the forceps, which weighed seventeen pounds and twelve ounces, and whose length was twenty-four inches; this last is the largest on record, that is, so far as we have ever been able to ascertain.

In Dr. Jaquett's case, the labor had continued many hours, but the head remained immovable at the superior strait; at length, satisfied that instrumental aid was necessary, he applied Davis's short forceps without difficulty; but upon making strong traction, they slipped continually; he then sent for Professor D. Gilbert, who employed a modification of Dr. Bethel's forceps. After considerable difficulty, the child was brought into the world; it was still-born. Astonished by its great size, the doctors immediately proceeded to weigh it, and found its weight to be sixteen pounds.

The contractile power of the uterus being apparently exhausted, the patient showed a strong disposition to hemorrhage, but by means of friction and the administration of ergot, this difficulty passed away, and she recovered without any bad symptom.—(*Philadelphia Medical and Surgical Reporter*, September, 1858, p. 571.)

Puerperal Fever. By J. A. WINDLE, M.D., Blountsville, Indiana.—Dr. Windle, after some few remarks upon the doctrines of Gordon, Hays, and others, and the teachings of Dr. Meigs, whose exclusive views of the pathology of this fatal disease makes the sheet-anchor in the treatment of every case the prompt and decided use of the lancet, proceeds to say, that though he perfectly agrees with the learned Philadelphia professor, in his view of the pathology of the disease, yet he thinks that there are many other means that may be employed which are more efficacious than blood-letting, in point of curative power.

Dr. Windle's position is, that according to his experience the disease is partially, if not exclusively dependent upon a malarial influence. He infers that this must have been the case in the particular epidemic, which he had an extensive opportunity of studying, from the fact that the remedies most successfully used by him were of an antimalarial nature. We quote the following passage from the doctor's paper:—

"Professor T. D. Mitchell, in his work on Therapeutics and Materia Medica, asserts that the great antiperiodic, sulphate of quinia, has been successfully employed as a prophylactic against its access. Now as the disease has been prevailing for nearly a year in our section of the country, and so much pain and suffering, together with the loss of some lives, was induced thereby, that I thought it my duty, as a philanthropist, to use some prevention, if possible, to stay its ravages."

In short, the author used the sulphate of quinia largely as a prophylactic, and found the effect highly satisfactory. Thus, in twenty cases to whom the quinia was administered in this way, not one was attacked by the disease; while among an equal number not submitted to the prophylactic treatment, eighteen suffered more or less severely from puerperal fever.

Dr. Windle recommends this use of the sulphate of quinia to the attention of the profession, for though his experiments were apparently satisfactory, yet he feels that a much wider field of trial is necessary to establish the efficacy of the plan.—(*The Cincinnati Lancet and Observer*, August, 1858, p. 460.)

Puerperal Fever. An abstract of the discussion at the Paris Academy of Medicine. Collated from the French journals for the *American Medical Monthly*, July, 1858, p. 19.—This is a most interesting paper, but to make it intelligible to the reader would require more space than can be afforded in an ordinary report; we therefore refer those interested in the subject to the original article.

Sulphate of Zinc in Hemorrhages. By WILLIAM HAUSER, M.D., Speir's Turnout, Georgia.—Dr. Hauser has used for many years the sulphate of zinc in hemorrhages, and states that in his hands he has never known it fail to arrest the most obstinate bleeding. He throws a teaspoonful of the salt into a teacup half full of cold water, and it is ready for use.

In the treatment of obstinate epistaxis he throws this solution up the nostril by means of a syringe, and assures us that the bleeding capillaries are immediately closed, and all danger ceases.

In uterine hemorrhage, when other modes of treatment fail, he uses the same solution, but adds, that he hesitates long, on account of the pain it is sure to produce when applied to a bleeding mucous surface.—(*Atlanta Medical and Surgical Journal*, November, 1858, p. 135.)

Catamenia during Pregnancy. By J. F. DURGIN, M.D., Portland, Maine.—This is a very singular and interesting case. It appears that this lady, at the fourth month of her pregnancy, was taken with violent convulsions, which, after some hours' continuance, terminated in violent uterine pain and a somewhat profuse discharge of blood, but no miscarriage.

The following is Dr. Durgin's account of this singular phenomenon: "When I first saw her, before making an examination per vaginam, I supposed the case might result in miscarriage, though I felt sure of the nature of the exciting cause, believing, from representations of the patient and her nurse, that her pains had been so severe, and her flowing so free, as to endanger the life of the fœtus, and render its expulsion certain. With this impression, I waited awhile to watch the character of the pains, which recurred about every ten or fifteen minutes generally, though not always accompanied with convulsions, more or less severe. A few intervals having passed, in the midst of a pain I made an examination with the index finger, and ascertained that the os was not dilated, and that the pains did not present that expulsive tendency which I should expect in a case of threatened miscarriage. Suspecting from this that it might be only a hysteric monthly excitation, attended with menstrual flux, on further investigation I learned that she had been subject at times to similar nervous convulsions, but not so often as monthly, and that the character and quantity of the present flow were very nearly like her usual courses, differing, if at all, in its greater abundance at this stage of the menstrual term. Accordingly I ordered a mixture of tinc. valerian and assafœtida, equal parts, with directions that a teaspoonful should be given every hour till she became quiet. The following day I found my patient somewhat better, though the flowing still continued, but attended by less severe pain, and the convulsions recurring at more protracted intervals. In a few days all the symptoms subsided, till the following month, November, when they again returned in all respects as before."

In short, these same symptoms, viz., convulsions, pain, and hemorrhage, recurred regularly every month, from the fourth month of utero gestation until full term, when the true pains of labor came on, with slight convulsions, which, upon the abstraction of fourteen ounces of blood, disappeared, and the lady was delivered of a fine healthy male child without difficulty or danger. In less than two weeks the patient was walking about the house, attending to her customary duties.—(*Nashville Journal of Medicine and Surgery*, January, 1858, p. 42.)

Tartar Emetic in Obstetrics. By J. W. Crooks, M.D., Rockport, Indiana.—The use of tartar emetic in cases of rigid os uteri has, from our earliest recollection, been recommended by obstetrical practitioners; we have used it ourselves, and thought that it was sometimes useful. Dr. Crooks speaks very highly of its powers; indeed, he is perfectly enthusiastic upon the subject, and seems to labor under the delusion, so common among medical authors, that his recommendation is a novelty.—(*Nashville Journal of Medicine and Surgery*, May, 1858, p. 389.)

Ointment of Iodine and Belladonna in Inflamed Mammæ. By J. S. WEATHERLY, M.D., Montgomery, Alabama.—Dr. Weatherly has used the following recipe with admirable effect in several severe cases of inflammation of the mammæ:—

℞.—Iodinii, grs. xv;
Ext. Belladonnæ, grs. xx;
Cerati, ℥ij. Mix.

(*Atlanta Medical and Surgical Journal*, September, 1858, p. 6.)

Inflammation, Ulceration, and Induration of the Os and Cervix Uteri, and Use of the Speculum. By W. M. CHAMBERS, M.D., Charleston.—This article is a defence of the use of the speculum, and the application of remedies directly to the neck of the womb for the above-named diseased conditions. The author seems to have had considerable experience, and is well informed on all that has been written on the subject. He gives particular directions for the manner in which the speculum (evidently a favorite instrument) should be introduced, and the medical applications made, which will no doubt be useful to many young gentlemen who are ambitious in the speculum way. We confess that we have no prejudice against the use of the speculum, if its application be necessary; but at the same time think that some of its advocates have, to the dishonor of the profession, disgracefully abused its use. The truth is, that it is an operation easily performed, and, unfortunately for its reputation, has hence become a fertile source of profit to ignorant quacks and charlatans of every description. In the hands of educated and conscientious men, we do not doubt its usefulness.—(*The Chicago Medical Journal*, September, 1858, p. 451.)

A case of Puerperal Convulsions. By W. S. FINDLAY, M.D., Tazewell, Claiborne County, Tennessee.—This was an ordinary case of puerperal convulsions, in which the lady was delivered by Dr. Findlay with the aid of the forceps. The treatment consisted in delivering as speedily as possible, blood-letting, and the use of purgatives and nervous stimulants. The patient recovered perfectly.—(*The Medical and Surgical Reporter*, March, 1858, p. 154.)

Case of Occlusion of the Vagina. By JOHN BOZZELL, M.D., Cape Elizabeth. It appears that a complete occlusion of the vagina had in this case taken place, from injuries received during a previous difficult and protracted labor, which could only be terminated by the operation of craniotomy. The occluded vagina was partially opened by Dr. Bozzell with the knife, and the curative treatment pursued by a dilating process. This was diligently followed for the space of six months; at the end of which time, the diameter of the canal was not more than three lines. "Menstruation was regular, and the patient, whose health in other respects was good, becoming weary, further efforts were abandoned. She was provided with a metallic tube to keep the canal open, kept in place by a T-bandage."

At length, at the suggestion of Dr. Tewksbury, of Portland, the reporter tells us that he commenced the use of the elm-tents. "They worked admirably. At the end of three months I was able to introduce one an inch and a half in diameter."

In consequence of this state of things, the lady became pregnant, the doctor was alarmed for the safety of his patient, but resolved to let gestation go on, in the mean time pursuing the dilatation with great perseverance. Finding, at the end of the seventh month, that the vagina would admit the introduction of a ball three inches in diameter, he resolved to bring on premature labor. The following quotation shows the wisdom of this decision:—

"On the 25th of February last, this being the beginning of the eighth month, I threw oz. viij. of warm water into the uterus, to separate the membranes, and thereby induce premature labor. This I repeated on the 26th, 27th, and 29th, when the pains became regular, and labor fairly set in. At four o'clock P.M., the os uteri was dilated to the size of a Spanish dollar, but being quite rigid I took from the arm oz. xij. of blood, and gave ol. ricini oz. i. This operated in two hours, after which the pains increased in force and frequency, causing the membranes to rupture. The head did not escape from the womb till midnight. It was now fairly in the vagina, and bearing hard upon the strictured portion, which gradually yielded, and though emphatically a tight fit, the child finally escaped at two o'clock on March 11th.

"To-day, March 30th, both mother and child are doing well; weight of child five and a half pounds."—(*The Maine Medical and Surgical Reporter*, June, 1858, p. 12.)

Observations on the Identity of Erysipelas and Puerperal Fever; Diffuse Inflammation Consequent on Erysipelas; Poisoning of the Blood after Parturition. By JOHN O'REILLY, M.D., Licentiate and Fellow of the Royal College of Surgeons, Ireland, Resident Fellow of the New York Academy of Medicine.—The ever-beginning and never-ending subject of puerperal fever we cannot pretend to enter into in a report like this. Dr. O'Reilly's article is a good one, and we recommend its perusal to the medical public; it will be found in the *American Medical Gazette*, December, 1858, p. 706.

Case of Cancroid Ulcer of the Os Uteri; Excision of the Entire Cervix; Recovery.—By C. E. ISAACS, M.D., Consulting Surgeon to King's County and Blackwell's Island Hospitals. After a consultation with several eminent New York physicians, this ulcer was pronounced malignant. Dr. Isaacs touched it several times with the actual cautery, with no permanent good effect; he then determined to remove with the knife the whole neck of the uterus; accordingly, the operation was performed. It is fully described in the article before us, and the result, so far as is at present known, promises a perfect cure.—(*The New York Journal of Medicine*, January, 1858, p. 46.)

Cases of Puerperal Convulsions, with Remarks upon the Treatment of Eclampsia. By E. N. CHAPMAN, M.D., Physician to the Long Island College Hospital, Brooklyn, New York.—This article opens with some general remarks upon the nature of puerperal convulsions, in the course of which the author gives it as his opinion, that certain electrical conditions of the atmosphere often act as predisposing causes. He points out the distinction generally admitted between hysteric, epileptic, and apoplectic convulsions, and gives some statistical statements from Churchill, showing that 79 cases of convulsions occurred in 38,306 cases of labor, or 1 in about 485. In Dublin, 30 cases in 1600, or 1 in 58 labors. From the year 1829 to 1842, at the Maternité, Paris, at the Clinique of Accouchements, the disease occurred 10 in 12,500 labors, or 1 in 1250 cases. Here is a difference so vast, that it seems perfectly unaccountable—we might almost say incredible. Dr. Chapman suggests a colder climate and frequent electrical changes of the atmosphere as a reason for its greater frequency in England and Ireland; but if sudden electrical changes have so much influence in producing puerperal convulsions, the women of the United States would be more liable to their attack than even those of England and Ireland, which is certainly not the case.

In speaking of the etiology of the affection, Dr. Chapman makes the following observations:—

"The etiology of this terrible malady is left in great obscurity by writers on this subject, and they make their statement of causes in a very loose manner. Evidently they know but little definitely on that point beyond vague generalities, affording no fixed data on which to found a rational treatment. How, I would ask, are we to benefit our patient, when we are ignorant of the very essence of the disease, and are driven to the fearful necessity of fighting an enemy in the dark? The causes suggested are atmospheric or endemic; the puerperal condition; excentric, as sympathy with the stomach, bowels, or uterus; mental emotions, fright, difficult and tedious labor; causing an accumulation of blood in the head, and pressure in the sacral nerves, etc. etc. First causes are not reached in this catalogue, and we must, if we look no deeper, be satisfied with some trivial exciting cause."

We are somewhat surprised to find that the author, in the midst of his murmurs over our want of definite knowledge of the causes of puerperal convulsions, should have entirely ignored the subject of albuminuria, a predisposing cause, which of late has so prominently occupied the attention of the profession. But Dr. Chapman's avowed object in publishing this article is to describe several cases of puerperal convulsions which occurred under his own immediate observation. They are nine in number, two of which died very soon after seizure, without much treatment of any description whatever; these the doctor calls apoplectic cases.

The other seven are epileptiform, two of which died, and five recovered. These cases are interestingly described; but as the original report can be easily obtained by all who are interested in the subject, we do not think it necessary to quote particulars.

On the subject of treatment, Dr. Chapman enters somewhat fully, particularly recommending the use of antimony as an auxiliary to the lancet, in cases which are accompanied by congestion of the brain. He says:—

"I consider that the antimony has a double action: the one, sedative and antiphlogistic; the other, antiphlogistic and contra-stimulant; and that from these combined effects it has great power in diminishing the capillary circulation. On this principle I would explain its action in congestion and inflammation of the lungs. It appears to me to exercise the same power in head affections, for the same reasons. To produce favorable results, the antimony must be given at an early stage, before the congestion is permanent. This remedy is particularly adapted to those cases in which there is great turgescence of the head, and generally free doses will be tolerated. In the opposite condition of the brain, vomiting will be apt to occur from the smallest quantity; and it may not exercise the least power over the disease. In such a condition, opium is our reliance."

This author enters his protest against the use of chloroform in puerperal convulsions, and strongly enforces the rule, to empty the womb of its contents by any justifiable procedure, without delaying to bleed, or wasting time in any preliminary treatment. "After the child is born, we can meet the demands of the case with better hopes of success."—(*The New York Journal of Medicine*, November, 1858, p. 345.)

Parturient Effects of the Sulphate of Morphia. By H. L. BYRD, A.M., M.D., Professor of the Principles and Practice of Medicine in Oglethorpe Medical College, Savannah.—Dr. Byrd in this paper states it as a therapeutical fact, which has been repeatedly demonstrated under his own observation, that sulphate of morphia increases the parturient efforts of the uterus. We quote the following passage to show the strength of his conviction on this subject:—

"I do not regard morphia as possessing superior properties to the secale cornutum, but I believe it is as generally certain in its effects as that article; indeed, I have several times administered the morphia with success in arousing the dormant contractions of the uterus, where a genuine article of the secale had failed in increasing or rendering more persistent the uterine contractions."—(*Oglethorpe Medical and Surgical Journal*, June, 1858, p. 73.)

A Valuable Remedy for Dysmenorrhœa and consequent Sterility. By E. D. FENNER, Professor of Theory and Practice, New Orleans School of Medicine.—Dr. Fenner recommends the following prescription for the relief and cure of dysmenorrhœa:—

℞.—G. Guiaci.	℥j
Bals. Canadens.	℥j
Ol. Sassafras.	ʒij
Hydrarg. Chlor. Corros.	℈j
Spts. Vini, Rectif.	℥viij.

"Dissolve the guiac. and balsam in one-half of the spirit, and the corrosive sublimate in the other. Let the guiac. and balsam digest for several days; then pour off the clear liquor, mix with the sublimate, and add the oil. Dose, ten or twenty drops night and morning in a wineglass of water."

This combination was originally used by a Dr. Falk, of London, from whose book it was taken, some forty or fifty years ago, by the reporter's father. It was called by Dr. Falk tinct. antacrida.

Dr. Fenner directs the patient to begin a day or two before the expected period, and take twenty-five drops in an infusion of sage or sweetened water, night and morning, until the discharge is freely established; then cease till the next period. Of course, in very severe and obstinate cases, the remedy must be applied earlier, and the doses more frequently repeated. In this the practitioner is expected to exercise a judgment.—(*New Orleans Medical News and Hospital Gazette*, July, 1858, p. 300.)

Dysmenorrhœa cured by Stramonium. By A. P. MERRILL, M.D., Memphis, Tennessee.—This is described as a very obstinate case, which had resisted a variety of treatment.

The patient was tocated with the extract of stramonium, commenced in grain-doses, every three hours, ten days before the menstrual period. After five or six months of such treatment, the doses being reduced to half a grain, she became pregnant, and in excellent health.—(*New Orleans Medical News and Hospital Gazette*, October, 1858, p. 517.)

Remedy for Dysmenorrhœa. By W. O. BARKER, Omega, Texas.—This recipe appears in consequence of the author's having seen Dr. Fenner's cure for dysmenorrhœa published in *The New Orleans Medical News and Hospital Gazette.*

Dr. Barker tells us that, strongly impressed by the suspicion that dysmenorrhœa is a rheumatic affection, he has been in the habit of treating such cases successfully with the following preparation:—

℞.—G. Guiaci.	℥j
Potassæ Nitrat.	ʒj
Flor. Sulphuris,	ʒj.—M.

All to be well ground in a mortar, and put into one pint of brandy or good whisky, and after standing a few days, to be taken in tablespoonful doses morning and night, commencing one week before the menstrual period.

In retention or suppression of the catamenia, when the subject is otherwise healthy, the author recommends the following recipe:—

℞.—Ol. Terebinth.	f℥j
Ol. Sassafras.	℥ss
Spt. Vini, Rectif.	f℥viij.—M.

To be given in some simple tea, in doses of fʒj, *pro re nata.*—(*New Orleans Medical News and Hospital Gazette*, November, 1858, p. 595.)

Removal of an Ovarian Tumor, in which the Ecraseur was used. By JOHN L. ATLEE, M.D., Lancaster, Pennsylvania.—This operation is fully described. Dr. Atlee ascribes the rapid recovery of the patient, with much less constitutional disturbance than usually follows capital operations, to the use of the écraseur, and the absence of any ligature involving the peritoneum.—(*The North American Medico-Chirurgical Review*, July, 1858, p. 698.)

A Case of Ovariotomy successfully performed. By ROBERT NELSON, M.D., New York.—This operation is likewise graphically described; but instead of the écraseur, the operator made use of strong hempen ligatures.

This lady, like the one operated upon by Dr. Atlee, made a complete and rapid recovery. The tumor weighed twenty-one pounds, and the abdominal incision for its removal measured twenty-two inches.—(*American Medical Monthly*, July, 1858, p. 14.)

Two Cases of Ovarian Dropsy successfully treated. By J. H. BREWER, M.D., Lawrenceburg, Indiana.—These two cases were treated by tapping and compression, as recommended and practiced by Mr. Brown, Surgeon-Accoucheur, of London. In addition to tapping and compression, Dr. Brewer informs us that he made use of iodine frictions, and the internal use of iodide of potassium, which he thinks materially aided the cure.—(*The Chicagó Medical Journal*, May, 1858, p. 212.)

Foreign Abstracts,

CHIEFLY FRENCH, GERMAN, AND ITALIAN; OR, BI-MONTHLY NOVELTIES IN MEDICAL, SURGICAL, OBSTETRICAL, AND CHEMICAL SCIENCE. BY EMIL FISCHER, M.D.

CHEMISTRY AND PHYSIOLOGY.

I.—*On the Locality in which the Impressions of Taste are received.* By DRS. KLAATSCH and STICH.

Drs. Klaatsch and Stich have, after many experiments, arrived at the conclusion that the locality which receives the gustatory impressions is a small space running around the tongue near its margin; in some persons it is hardly two lines wide, in others, it is double this width; in most cases it occupies just the middle of the margin of the tongue; in some, it approaches nearer to its upper surface; only in very few instances, it lies closer to the under surface. In investigating the surface of the tongue, care must be taken that the substances applied to it do not come too near its margin; it is therefore best to commence by brushing them on the middle of the tongue, and to approach the margin gradually. This experiment will show that, in most individuals, the application can be continued until it reaches the margin of the tongue, without taste becoming perceptible, while in others, the perception of taste commences at the distance of a line from the margin. Gustatory impressions are also perceived through the medium of the soft palate. That the pharynx and tonsils do not possess the sense of taste, is proved by the fact that in touching the throat with nitrate of silver, the patients do not experience the disagreeable taste of this substance, provided that they keep their tongue at rest, and that this organ, as well as the soft palate, are avoided in the application.—(*Virchow's Archiv. f. Patholog. Anatomie, Physiologie und Klinische Medicin,* xiv. 3, 4.)

II.—*Physiological Researches on Digestion.* By DR. BUSCH.

The author had an opportunity of studying the physiological phenomena of digestion, in a woman suffering from an intestinal fistula which communicated with the upper part of the jejunum, and had been produced by a penetrating wound of the abdomen. The patient had a voracious appetite and devoured an enormous quantity of food, the greater part of which escaped through the orifice of the fistula, mixed with bile and the gastric, intestinal, and pancreatic juices; the orifice of the lower portion of the intestines, being at a great distance from the upper, did not receive an atom of aliment. This state of affairs had produced extreme emaciation and debility, accompanied by a great tendency to sleep, hoarseness, etc.

Dr. Busch concluded to inject aliment into the lower portion of the intestines; he used especially concentrated broths, to which beaten eggs, and sometimes hard eggs and meat were added. This treatment revived the strength of the patient and caused her to gain more flesh, a curious result, which shows that the absorption and assimilation of food is, at least for a time, possible without the aid of the gastric, duodenal and pancreatic secretions, and of bile. Just as remarkable is the fact, that the ingestion of food through the mouth alone, was sufficient to keep this woman alive, after she had once regained her strength by the mode of alimentation employed by Dr. Busch.

The results of the experiments made by the author on the patient may be resumed in the following propositions:—1. The sensation of hunger is ordinarily composed of two distinct impressions: the one has its origin in the general nervous system, which feels, so to say, the necessity of being renewed; the other is exclusively produced by the nerves of the digestive organs. 2. The peristaltic movements of the intestines are intermittent, without there being any regularity recognizable in the alternation of repose and contraction. Dr. Busch could not exactly determine the energy of these movements, but has ascertained that it is superior to the pressure of a column of water two feet high; he also has seen that the lower end of the intestines often presented very manifest anti-peristaltic movements. 3. The intestinal juice is never produced but in very small quantity; its reaction is always alkaline; it contains from 3·87 to 7·4 per cent. of solid matter. 4. Its influence upon the digestion of protein substances is not to be doubted, but it is always accompanied by the putrefaction of these substances. 5. The intestinal juice transforms starch into grape sugar. 6. It does not transform cane sugar into grape sugar. 7. Grape sugar is absorbed without being modified, and does not pass into the urine. 8. The absorption of fatty matter is impossible, or at least, very incomplete, if it is not subjected to the action of the gastric and pancreatic juices. 9. The reaction of the mixture of secretions which escaped from the upper end, in state of fasting, was nearly always neutral, rarely a little acid or alkaline. 10. This mixture never shows the reaction of the saliva; we may therefore conclude that the saliva is absorbed before arriving at the jejunum. 11. The same mixture contains 2·48 per cent. of solid substances. 12. The first portions of food introduced into the stomach show themselves in the jejunum at the end of fifteen to thirty minutes. 13. The solutions of cane sugar disappear for the greater part in the uppermost portion of the digestive tube; when the cane sugar arrives in the jejunum it is transformed into grape sugar. 14. White of eggs, in a raw state, is also absorbed in great part by the stomach and the contiguous part of the intestines; on arrival in the jejunum it does not undergo transformation. 15. Gum traverses the small intestines without being modified. 16. Gelatine is dissolved and does not coagulate consecutively; it is absorbed in great part. 17. A part of the casein contained in milk arrives in the jejunum without being coagulated. 18. The mixture of digestive liquids contained in the duodenum emulsifies perfectly the fatty matter, if its reaction is alkaline; if it is acid, the emulsion is incomplete. 19. This mixture has the property of digesting protein substances. 20. The quantity of digestive liquids which arrives as far as the jejunum in twenty-four hours, is equal at least to the twenty-seventh part of the weight of the body.—(*Archiv. für Pathologische Anatomie,* xiv., 1858, and *Archives Générales,* February, 1859.)

III.—*On a New Function of the Placenta and of the Amnios.* By M. CLAUDE BERNARD. (Communication made to the *Académie des Sciences,* January 10th, 1859.)

M. Claude Bernard had pointed out, a long time ago, the existence of glucose in the liquor amnii. In pursuing his researches on the origin of this substance, he found that the placenta of certain mammalia contains, in the normal state, a considerable quantity of the sugar-forming substance which he has discovered to be constantly present in the liver. The ruminantia seemed to offer an exception; but M. Claude Bernard has finally overcome this last difficulty. In these animals the sugar-forming substance is produced in certain points of the amnios, instead of being found in the placenta.

The sugar-forming matter of fœtal life, whatever be the species under observation, is produced by cells which, in their histological characters, are similar to the cells of the liver in full-grown animals.

In the rodentia, these cells are found between the fœtal and the maternal placenta. In the ruminantia, whitish spots are seen on the amnios, which have either been left unnoticed by the observers, or have been mistaken for pathological productions of epithelial nature. These white spots are constituted by agglomerations of cells similar to the preceding.

On examining these spots with the microscope, they are found to be composed of a kind of papillæ filled with cells and circumscribed by an amorphous membrane. Iodine imparts to the cellular contents a rose color.

The layer of cells separating the fœtal and maternal placentas in the rodentia, and the papillæ containing the cells in the ruminantia, are developed from the earliest period of fœtal life, and begin their function immediately. Resembling the hepatic cells in their form, they perform a similar office, at least as far as the production of glucose is concerned, for M. Bernard has not yet terminated his researches with regard to the possible secretion of bile by these organs. Thus it is a true liver, the existence of which was absolutely unknown until the present time. While these organs are active, the internal liver of the fœtus is in a rudimentary state; its cells, which are quite embryonic, produce neither sugar-forming substance nor glucose. Later, they change their aspect, assume their normal form and dimensions, and commence to secrete sugar-forming matter. At the same time the hepatic cells of the placenta and of the amnios become atrophied, and disappear afterwards.

The glucogenous matter exists thus in animals from the beginning of fœtal life, and seems, consequently, to be a necessary element of the first cellular formations. In the same manner, the secretion of this matter continues during the whole life for the sake of the renovation of the histological elements of the grown-up animal; for the acts of nutrition cannot, in a physiological point of view, differ essentially from those of the first development.—(*Gazette Hebdomad.*, January 14th, 1859.)

IV.—*Observations on the Changes of the Urine in Disease.* By DR. BRATTLER.

Dr. Brattler has made a series of very accurate investigations on the changes of the urine in typhûs, morbilli, scarlatina, diseases of the heart, etc., which he laid down in an elaborate treatise, entitled "*Beitrag zur Urologie im Kranken Zustande;*" München, 1858, *Joh. Palm's Hofbuchhandlung.*

The author gives the following summary of his urological observations :—

Casting a retrospective glance upon our investigations and experiments, we find that the urine does not suffer in disease any changes peculiar to the different morbid conditions, but that these changes are in relation with definite processes going on in the organism. The urine of a case of typhus, pneumonia, cholera, or Bright's disease, may have one and the same qualities, for the very reason that certain processes, which modify the secretion of urine, may take place in any of these diseases.

The quantity of urine. It is *diminished:* In the commencement of nearly all febrile diseases; in diseases of the kidneys, when the uriniferous tubules are obstructed, (morbus Brightii.)

In diseases in which the organism suffers great losses of serum, as excessive diarrhœa, cholera, copious perspiration.

In diseases of the circulatory and respiratory organs, in consequence of which less blood is furnished to the aortic system, and therefore to the kidneys, as disease of the heart, and pleuritic exudation.

It is *augmented:* By the resorption of hydropic effusions and exudations.

In polydypsia, diabetes insipidus.

Urea. It is *diminished:* In the re-convalescence from all acute diseases, in which the organism has suffered a considerable loss of substance through fever, as in this case the nourishment carried into the system is used for the reparation of the lost nitrogenous tissues.

In diseases of the digestive organs which hinder the resorption of the ingesta, as chronic vomiting in atrophy after typhus, and cancer of the stomach.

In diseases of the kidneys, interfering with their functions, (morbus Brightii.)

In diseases of the circulatory and respiratory organs, in consequence of which less blood is furnished to the aortic system, and therefore to the kidneys.

It is *augmented:* In all diseases accompanied by fever, viz., by elevation of temperature. (The frequency of the pulse bears no constant relation to the secretion of urea.) The secretion of urea is the greater the higher the temperature rises.

An exception takes place only when in febrile diseases the function of the kidneys is at the same time interfered with, be it by disease of these organs themselves, or secondarily by the influence of other organs.

In diseases in which the urea has been retained for a long time in the blood by functional disorder of the kidneys, after removal of the difficulty, as morbus Brightii, cholera, and disease of the heart.

By the resorption of hydropic effusions, as morbus Brightii, and dropsy from disease of the heart.

Chlorides. They are *diminished:*

In all diseases in which exudations or transudations take place, these effusions being rich in chlorides, as typhus, pneumonia, pleuritis, Bright's disease, cholera, acute rheumatism, etc.

In diseases of the digestive organs which hinder the resorption of the ingesta.

In diseases or functional disorders of the kidneys with diminished urinary secretion, as Bright's disease, and disease of the heart.

They are *augmented:* By the resorption of hydropic effusions.

Phosphoric acid. It is *diminished:*

In diseases or functional disorders of the kidneys with diminished urinary secretion, as Bright's disease, and disease of the heart.

In diseases of the digestive organs which hinder the resorption of the ingesta.

It is *augmented:* In acute febrile diseases by the increased metamorphosis of tissues containing phosphorus.

The increase of phosphoric acid is, however, not as constant as that of urea. In diseases in which the phosphoric acid has been retained for a long time in the blood by functional disorder of the kidneys, after removal of the difficulty, as Bright's disease, and cholera.

According to *Bence Jones,* in acute nervous diseases, and in osteomalacia.—(*Medicinische Central Zeitung,* 83, 1858.)

PATHOLOGY AND THERAPEUTICS.

V.—*Observations on Chorea Magna.* By PROF. SKODA.

Chorea magna differs from the so-called chorea minor only in its paroxysmal character, while the latter consists of continued clonic spasms. It is indifferent what kind of movements take place; they may vary very much, and either consist in springing, turning, or weltering, rolling, etc. The movements are commonly very violent, but in spite of continuing for one hour or longer, are not followed by exhaustion or pain. The disease is distinguished from paralysis agitans by the trembling movements characteristic of the latter, while in chorea the limbs are moved in a quite normal manner. The cause of chorea magna is still unknown, but so much may be stated in reference to it, that the changes of the brain or spinal marrow in this disease, as in chorea minor, can be of but insignificant character, while in paralysis agitans the disease of these structures is by far more advanced. From the temporary appearance of chorea magna, it seems probable that not so much organic disease of the nervous centres, particularly of the brain, is present, the disturbances of the latter alone being sufficient to explain all the symptoms,—as merely functional alteration, particularly of the organs presiding over motion, though sensation is also frequently affected. This anomaly of function is probably the reason that chorea magna is cured more easily than chorea minor, which runs its course generally in a definite length of time. Relapse is equally common in both diseases; great caution is, therefore, necessary after the cessation of the malady.

The best remedy is *quinia*, small doses of which are sometimes sufficient to effect a cure, but often the dose must be raised to thirty-six grains. In order to avoid a relapse, these large doses must be several times repeated, as in intermittent fever. They are generally borne without bad consequences.—(*Allgem. Wien. med. Ztg.* 36, 1858, and *Schmidt's Jahrbücher*, 1859, I.)

VI.—*Observations on the Etiology and Treatment of Hemicrania.* By DR. MERZ, of Böhrenbach.

The author has made the observation, important in a practical point of view, that hemicrania is curable by compression of the carotid artery of the affected side; in order to make the cure permanent, the compression must be continued for a length of time; a temporary use of the measure will afford only transitory relief. The shortest duration of the compression is fifteen minutes. The cause of this influence the author assumes to be the diminished supply of arterial blood to the vessels of the base of the brain; in three fatal cases he found these vessels in a state of aneurismal enlargement. Although this enlargement remains without influence upon the cerebral functions as long as the pressure of the blood is normal, it occasions a considerably increased flow of blood to the brain, with its evil consequences, whenever the pressure is augmented. The author points out that analogous changes take place in epilepsy, in which disease Schroeder van der Kolk has observed an increased afflux of blood to the medulla oblongata. Dr. Merz is, however, by no means inclined to recognize this as the only cause of hemicrania.

The pressure is exercised either with the thumb, or with a compressor made of a powerful spring, and shaped like a hernia-truss. The instrument is adjusted upon the muscles of the neck, its pad resting upon the carotid at the point where the vessel emerges from under the sterno-cleido-mastoideus. Dr. Merz reports twenty-four cases, which speak very favorably for his method.—(*Aerztl. Mitthlg. a. Baden*, xii. 15, 1858.)

VII.—*Water-Glass, a Partial Substitute for Collodium.* By DR. KUCHENMEISTER.

Preparation of water-glass, (Lehmann's Taschenbuch d. theor. Chem.) If ten parts of potassa are melted together with fifteen parts of powdered quartz, and one part of charcoal, a blackish-gray glass is obtained which is soluble in five parts of water; on evaporating this solution, an opalescent, semi-fluid mass is formed, which has an alkaline taste and reaction, and does not absorb carbonic acid from the air; by slow evaporation it is formed into a glassy mass of conchoidal fracture, unchangeable at the atmosphere; it is this water-glass = $3KO,8SiO_3$. A similar substance is obtained with soda.

The author has used this substance as an external application in cases of bee-sting, with excellent result, and has found it to diminish the pain and swelling very promptly; he explains its efficacy partly by the circumstance that the alkaline water-glass neutralizes the acid of the bee's poison (formic acid,) partly by the fact that on evaporating slowly on the skin—similar to collodium, but somewhat slower—it forms a smooth and even coating, which protects the wound from the entrance of air, dust, and other foreign substances. Water-glass may thus be usefully employed:—

1. *In cases of bites and stings of such animals which introduce an acid poison into the wound,* viz., bees, bumble-bees, wasps, hornets, gnats, mosquitoes, bugs, toads, perhaps also snakes. But the author recommends the remedy particularly in cases in which ticks, sand-bugs, lepti autumnales, and crab-lice have bitten themselves into the skin, as the removal of the parasite is much facilitated by the application, the coat formed by the water-glass suffocating the animal by obstructing the tracheal openings which project from its body.

2. The application of water-glass proved also very efficacious in a case of *erysipelatous inflammation* of the hand in a child; in erysipelas ambulans of the face, the author has not been so successful with the remedy. Whether it could be used with advantage in mastitis, skin diseases of different nature, particularly those of the humid kind, or in tetter with an acid reaction, remains to be ascertained; in herpes circinatus it is very useful.

3. Water-glass is one of the best means *to cleanse the skin* from tar, varnish, residues of plaster, etc.; it may perhaps be also usefully employed to clean the scalp in diseases of the hair.

It is inferior to collodium in respect to tenacity, and is, therefore, less applicable in gaping wounds; in cases in which a coating is required to be durable if immersed in water, it cannot be used at all. In order to avoid its crumbling off, the coating ought to be renewed from time to time. *It is again preferable to collodium* on account of the greater readiness with which it can be removed.—(*Memorab. a. d. Prax.* iii. 8, and *Schmidt's Jahrbücher*, 1859, I.)

VIII.—*Ethereal Oil of the Horse-Chestnut as a Topical Application in Gout and Rheumatism.* By MM. GENEVOIX and CH. MASSON.

On extracting powdered horse-chestnuts with sulphuric ether, and on evaporating the latter, an oil is obtained (about one drachm from ten pounds and a half of horse-chestnuts) which has proved a useful application in gout and rheumatism. The oil is painted several times in quick succession upon the suffering part, or around it, if it is too sensitive; the painted part is then covered with blotting-paper, over which cotten or flannel, and oiled silk is applied. The dressing may be renewed several times daily, according to necessity. During the first half hour the pain is often, though not always, augmented, but decreases afterwards quickly, and ceases entirely.—(*Bull. de Thér.* lv. p. 217, September, 1858.)

IX.—*Ointment for Sore Nipples.* By DR. VAN HOLSBECK.

Dr. van Holsbeck recommends the following mixture, which he has used with much success in the treatment of sore nipples: Oleum cadinum, 3½ parts; Ol.

amygdal. dulc., 3 parts; and Glycerin, 3 parts. If the fissures in the nipple are very deep or large, the quantity of the Ol. cadinum must be increased, and the mixture must be applied with a camel's-hair pencil each time after the child has taken the breast. The odor is not unpleasant to the infant, and the application does not occasion pain, but only a gentle heat; the fissures heal within a few days.—(*Preuss. Vereinsztg.*, July 21, 1858.)

X.—*On the Diuretic Properties of Coffee.* (Allgemeine medizin. Centralztg. November, 1858.)

As early as the year 1725, Dr. Th. Zwinger, a Swiss physician, recommended coffee as a remedy in dropsy. More recent investigations have proved that by the use of coffee the amount of water in the urine is increased, while urea, phosphoric acid, and other substances are rather diminished, and consequently remain in the body, a circumstance which may serve to explain the nutritious properties of coffee. As a diuretic, coffee ought not to be given with milk, this mixture producing in many persons flatulence and diarrhœa, but as pure decoction which, as is well known, exercises a tonic influence upon the intestinal canal. As a special remedy in dropsy, coffee is hardly known at the present time.

XI.—*On the Topical Use of Laudanum in Affections of the Eyes.* By Prof. Nasca, of Naples.

Prof. Nasca is of the opinion that the local application of laudanum in diseases of the eyes is at present too much neglected. Acute inflammation of the conjunctiva contra-indicates the use of this remedy; as soon, however, as the acute state has been removed by the antiphlogistic treatment, and the inflammation assumes the chronic character, laudanum is very efficient. For about a week one drop of the preparation is dropped into the eye once every day, and the quantity is gradually increased to two, three, and four drops daily. The use of emollient lotions and fomentations is to be entirely avoided, but light wine, with a small addition of tincture of myrrh, will be found a very serviceable application.

The author derived, also, great advantage from the external use of laudanum in the case of old persons whose faculty of vision was growing feeble, and seemed to require the aid of convex glasses. The patients were ordered to rub laudanum on the forehead and eyelids every night, and not to remove the application until the next morning; after continuing this treatment for about thirty to forty days, the patients generally found their sight improved in a remarkable degree. This method can be, of course, only successful in cases in which there exists no divided material alteration in the nervous apparatus of the eye.—(*Gaz. Médicale de Lyon*, November, 1858.)

DISEASES OF WOMEN, AND OBSTETRICS.

XII.—*Observations on the Use of the Tampon.* By H. Montanier.

The author endeavors to show the great usefulness of introducing a tampon into the vagina, particularly in cases of metrorrhagia and vaginitis; he believes that the measure is attended with but little danger, and that even this could be entirely avoided by the use of some precaution; he is convinced that the usefulness of the operation, and consequently the frequency of its application, would be considerably increased if its execution could be simplified and rendered more effective. Although the introduction of charpie by means of a speculum is easy and simple enough, the removal of the same is so much the more troublesome. Gariel's caoutchouc tampons, which are inflated by air, are liable to fall out when they become lubricated by the secretions; they do not occlude the vagina completely, and do not admit the topical application of medicines. In order to remedy these defects, M. Montanier directs the tampon-ball to be covered with linen and to fasten upon this a layer of sponge, one and a half to two inches in thickness. This kind of tampon plugs up the vagina and neck of the uterus completely, without requiring to be much inflated; it never falls out and can be easily soaked with medicinal substances; moreover, it is easy to keep this tampon clean, to introduce, and to remove it. Even in dislocations of the uterus, this kind of tampon may prove very servicable.—(*Gazette des Hôpitaux*, 112, 1858.)

XIII.—*Hœmatocele Retro-Uterina Catamenialis.* By M. TROUSSEAU.

Hæmatocele retro-uterina, consists in an accumulation of blood in the peritoneal cavity in the space between the rectum and uterus, in consequence of which the uterus is displaced forward and upward. On examination, the cervix uteri is found to be pressed against the pubic bone, and behind it at the bottom of the vagina a tumor is discovered which seems to belong to the womb, and easily misleads the examiner to the diagnosis of complete retroflexion of the uterus. In the generality of cases the fundus uteri can be plainly felt and distinguished above the symphysis pubis; if, however, the effusion of blood is more considerable, and extends upward beyond the inlet of the pelvis, this cannot be done. The diagnosis can be rendered very difficult by the circumstance that a collection of blood in the cavity of the uterus exists together with the hæmatocele.

The first symptom of hæmatocele is usually pain; Nélaton explains this symptom by inflammation of the peritoneum, but the author does not agree with this view. Another symptom is paleness of the skin.

If a young woman, at the time of menstruation, suffers pain in the pelvis, accompanied by paleness of the skin, while the menstrual discharge is but very small or does not appear at all, a hæmatocele can be diagnosticated almost with certainty.

M. Trousseau considers the disease to be essentially a disorder of menstruation, a menorrhagia, which, instead of choosing the usual outlet through the uterus and vagina, finds its way into the peritoneal cavity; he believes, therefore, that the principal object of the treatment should be to regulate the disturbed menstruation. If in a still young woman the catamenial discharge is too profuse, the best remedy is cinchona, which should be given in the form of powder every three to four days in doses of about one drachm; should the remedy not be borne in this form, it may be administered in the form of enema. In an anæmic condition iron is indicated. The medication just mentioned serves to prevent further hemorrhages; but in order to master the menorrhagia at the time of its occurrence, astringents and acids should be made use of. The pain, which the author does not ascribe to inflammation of the peritoneum, but to the afflux of blood, is according to him most effectually diminished by warm poultices applied to the painful part; in recommending this measure, the author takes the view, that the increased afflux of blood is kept up by the pain, and that it is therefore necessary to endeavor first of all to remove the pain.—(*Gazette des Hôpitaux*, 75, 1858.)

XIV.—*On the Treatment of Vesico-Vaginal Fistula.* By DR. MOMM.

After Vidal and Carteaux had made the observation, that the troublesome symptoms of vesico-vaginal fistulæ are sometimes removed by the walls of the vagina growing together, the menstrual blood being then discharged through the bladder; furthermore, after Jobert, Simon, and Professor Roser, of Marburg, had obtained so much success by closing up the upper part of the vagina in such a manner as only to leave a communication between the bladder and uterus through which the menstrual blood was discharged, as in the former case, M. Simon was induced to try the successful *operation of closing up the entrance of the vagina by sutures in cases of vesico-vaginal fistulæ, which could not be removed in any other way.* Professor Roser considers the use of sutures in this operation as rather dangerous, as in sewing the bladder and the rectum together both parts have to be pierced several times with needles. In the case reported by Dr. Momm, (*Dissertation,* Marburg, 1858,) Professor Roser obtained an equally favorable result, and closed up the entrance of the vagina completely, by *making the vagina raw, and thus effecting spontaneous obliteration of this canal.* In order to make the operation successful, the vaginal mucous membrane must be of course removed rather extensively, that is, at least to the extent of one inch and a half.—(*Arch. f. Physiol. Heilkde.*, 1858.)

XV.—*On a Mechanical Impediment of Labor, not Sufficiently Noticed.* By DR. SPIEGELBERG.

More frequent than cases of real weakness of uterine contractions, are those cases in which the head, in spite of strong labor-pains, remains standing upon the bottom of the pelvis without advancing over the perineum. Both circumstances generally indicate the application of the forceps. The indication, "weakness of uterine contractions," is, however, often misused. The cause which hinders the expulsion of the head, in spite of normal labor-pains, and renders the operation with the forceps commonly very easy, is a purely mechanical one, and consists, according to *Dr. Spiegelberg, in too great flexion of the child's head upon the breast.* The face is turned toward the coccyx of the mother, the cranium rests upon the perineum, the nape of the neck is behind, the occiput below the symphysis, and in the bottom of the vagina. The uterus, already retracted above the head, acts only upon the trunk, in consequence of which the occiput is pressed more and more downward with each successive pain. On applying the forceps properly to the sides of the head and conducting it upward in the direction of the continuation of the axis of the inferior strait, the chin is removed from the breast, the neck is extended, and the head finally delivered; in order not to tear the perineum, the head must be, of course, raised but very slowly.—(*Monatschr. f. Geburtsk.*, 1858.)

SURGERY.

XVI.—*New Method of Treating Powder-wounds.* By PROF. BUSCH, of Bonn.

Instead of treating powder-wounds by the painful process of digging out each single grain of powder with the knife or needle, Professor Busch recommends the fomentation of the wounded part with a strong solution of corrosive sublimate (gr. v. to ℥j ;) this application produces an eczematous inflammation; some of the vesicles simply dry up, others form scabs. On removing such a scab, the grains of powder are seen to adhere to its under surface, and underneath it a newly-formed, spotless epidermis is found. The scabs and epidermis scales, together with the grains of powder, may then be scraped off with a spatula.

Any other strongly irritating application may be used with success; the solution of sublimate recommends itself the most, because in using it, the degree of irritation can be controlled pretty accurately, and because after the healing of the eczema produced by it, a white skin remains.—(*Virchow's Archiv. f. Pathol. Anatomie, Physiologie u. f. Klin. Med.*, xiv. 3, 4.)

XVII.—*On the Treatment of Inflammation by Digital Compression.* By PROF. VANZETTI, of Padua.

After having been several times successful in treating aneurisms by digital compression, Professor Vanzetti conceived the idea of applying this therapeutic method, which is so simple in execution, and at the same time so efficacious in its results, to the treatment of inflammation of the extremities.

The actual knowledge we possess on the pathological physiology of inflammation, permits the surgeon to preconceive what would be the effects of compression of the principal artery, the branches of which are distributed to the suffering part; the retardation of the circulation of the blood would soon be followed by a considerable diminution of the inflammatory symptoms. The results obtained by this method have been so satisfactory, that M. Vanzetti does not hesitate to adopt it as a usual means of treatment in preference to any other. Twelve to fifteen hours of intermittent compression are sufficient for obtaining a considerable amelioration; the patient can, in the majority of cases, make the pressure himself, after the surgeon has made it for one to two hours, and has shown him how to apply the fingers upon the course of the artery. If the hand, after having been applied for some time, commences to experience fatigue, the compression may be left off, and resumed again after the fingers have well rested.

Professor Vanzetti reports two interesting cases, which serve to support his observations: one of phlegmonous erysipelas of the arm, the other of arthritis of the wrist, in which the cure was promptly obtained by compression alone; and from these facts he draws the following conclusions:—

1. Digital compression cures inflammation quickly, by retarding the impulse of blood in the diseased part.

2. It can be applied by the patient himself, and should be continued until the pulse of the inflamed member becomes equal in frequency and intensity to that of the sound side.

3. In cases in which the inflammation is already too far advanced to be cured by resolution, arterial compression establishes suppuration more promptly; the mortified portions of skin and cellular tissue are separated quicker and more easily.

4. Digital compression is superior to other means employed at the present, with a view to retard and intercept the circulation in the thoracic extremities, on account of the finger being able to reach and compress the subclavian artery successfully, when the humeral or axillary artery are rendered inaccessible by the inflammation of the parts surrounding them, and the subclavian cannot be compressed by any mechanical apparatus.—(*Cenni sulla cura dell' inflammazione colla compressione digitale.* Venise, 1858; and *Archives Générales,* February, 1859.)

XVIII.—*On the Treatment of Burns by the Permanent Warm Bath.* By DR. PASSAVANT.

Dr. Passavant had an opportunity of testing his method of treatment in thirteen cases of burns of all degrees which were occasioned by an explosion in a fireworks factory, and were brought into the Hospital of Frankfort. All these cases were treated by permanent warm baths, or, if this was inapplicable, by fomentations of warm water. The water was renewed twice daily or oftener, if the suppuration was very copious, and was always kept at a temperature of 27° Réaumur. The apparatus employed were similar to those used by Professor Langenbeck in the treatment of amputations; if, after some weeks, the patients became fatigued by them, warm fomentations were used in their stead.

The first effect produced by the bath, was a considerable relief, and the pain, which was excessive at the beginning, soon ceased completely. The parched and hardened tissues, which were penetrated by the water, became soft, and the sloughing parts detached themselves with more facility. Besides, this mode of treatment protected the injured surface from all causes of irritation, and diminished the chances of purulent resorption. Cicatrization finally took place more rapidly, owing to the maintenance of a uniform temperature, and to the light compression exercised by the water upon the diseased tissues.—(*Deutsche Klinik,* 1858, 36, 38, and 39; and *Archives Générales,* February, 1859.)

XIX.—*Clinical Remarks on Dermoid Cysts.* BY PROFESSOR LEBERT.

This treatise, which includes several new observations, is destined to complete a memoir presented by the author to the *Société de Biologie* in the year 1852, in which are collected mostly observations relative to dermoid tumors. These tumors may be developed either in a part of new formation, or in a normal pre-existing cavity; they are composed of elements identical with those of the tegumentary system, which are developed on the internal surface of a sac closed on all sides. We meet there with epidermis, papillæ, the proper tissues of the skin, sudoriparous and sebaceous glands, hairs with their bulbs and ordinary coverings, and cellulo-adipose tissues; the cyst contains fatty masses emanating from the sebaceous glands, detached hairs, and isolated epidermic lamellæ. In addition to this, its walls often include teeth, bones, and cartilages, which are mixed in most variable proportions with the dermoid products. These productions belong, according to Professor Lebert, to the class of plastic heterotopies, and not to inclusion.

These cysts are often seated in the subcutaneous cellular tissue; if this variety is observed in animals, it is found that these productions of hair, etc., are always analogous to those which are met with on their integuments in the normal state, and that the tumors augment each year at the time when their hair falls, and is replaced by new epidermoid appendages.

The subcutaneous dermoid cysts in man exist usually from the time of birth; their seat of predilection is on the surface of the superior eyelid or of the root of the nose; in the former place they are generally oval, while those of the root of the nose are oftener spherical.

These tumors grow but very slowly, and it is rare that they ever exceed the volume of a hazlenut. The skin which covers them glides easily upon them, but they adhere often to the deep tissues, a circumstance which serves to distinguish them easily from atheromatous cysts which adhere to the skin, and are displaced with it; they are a little more frequent in men than in women.

On extirpation they are found to adhere intimately to the periosteum; it is important not to leave this deep part in place, as it is not exfoliated in consequence of the suppuration, like most other cysts, but may give rise to an obstinate fistula, if left behind. It happened in two cases reported by M. Lawrence, that in laying open the fistulous passage he found on the bottom of it the remainder of a cyst, from which several hairs were growing; on the removal of this residue, a cure was quickly obtained.

Dermoid cysts of the external genital organs in women are not very rare; they are found especially in the ovaries, but sometimes also in the tissue of the uterus. If they are not very voluminous and rest stationary, they often give rise to no symptoms; and the same is frequently the case in the early stages of those which some time later manifest a tendency to greater development. If the physician is then consulted, they have commonly acquired already the size of a fist. They are met with especially on the right side, where their presence causes a pain or a vague feeling of uneasiness in the abdomen; their subsequent development is generally accompanied by more pain than is the case in ordinary ovarian cysts, and is often attended with a copious leucorrhœa. Disorder of menstruation is not a constant symptom.

In most cases these tumors are for a long time of a rather hard or flabby consistence, and it is only at an advanced period that fluctuation is perceptible; the dermoid cyst has then become the seat of a serous exhalation; sometimes they contain only a serous liquid mixed with hairs and fat, and then an explorative puncture will be sufficient to establish the diagnosis.

Other symptoms, which in nowise differ from those of ordinary ovarian cysts, are referable to the compression of the organs contained in the true pelvis.

The cysts may empty themselves into the bladder, the rectum, or may perforate the abdominal walls, and thus evacuate their contents externally; the diagnosis is then easy. It must, however, be remarked, that they develop themselves not only in the ovary, but also in the retro-vesical cellular tissue; cases of this kind have been observed in men, and this possibility must always be kept in mind when we meet with a case in which urine containing hairs is voided. In more unfortunate circumstances, the cyst may empty itself into the peritoneum; Professor Lebert reports a case of this kind.

M. Jaczenky has seen a cyst of this description make its way into the vagina; an abscess opened at the bottom of the posterior cul-de-sac, and a hard body was discovered in this situation, which had troubled the husband of the patient very much during coitus, and had also excoriated the cheek of her last child during the act of labor; it was found to be a bone, furnished with two molar and two incisor teeth. The teeth were pulled out, but it was impossible to remove the bone which supported them.

In some cases, dermoid cysts, situated between the uterus and rectum may form an obstacle to the delivery of the child. In two cases of this kind, the expulsion of the child was followed by that of the cyst.

These cysts, even if they do not remain in the latent state, do not necessarily prove fatal, although this termination is much to be feared in consequence of the different perforations indicated above. They develop themselves principally at the period of puberty; in this respect they differ essentially from the subcutaneous cysts.

The treatment of dermoid cysts seated in the internal genital organs can often be but palliative; only if they show a tendency to open externally, interference with the bistoury or with the aid of caustics may be of use. If they have opened to the outside of the abdominal walls, or into the bladder, etc., the indications will be discerned without difficulty.

The memoir of Professor Lebert closes with the report of a case in which a dermoid cyst was situated in the anterior mediastinum.—(*Prager Vierteljahrschrift*, 1858, iv.; and *Archives Générales*, February, 1859.

Bi-Monthly Periscope.

SURGERY.

1. UPON THE CAUSES OF DEATH AFTER AMPUTATION. Read before the Royal Medical and Surgical Society.—By *Mr. Thomas Bryant, F.R.C.S.* The author, after having made a few preliminary observations, stated that his paper was based upon an analysis of three hundred cases of amputation, collected from the records of Guy's Hospital. He had divided them into four classes; and although he had not thought it necessary to alter the ordinary division of traumatic amputations into primary and secondary, he had made some change in the division of the other forms; for it became evident, in the analysis, that the classing together of such cases as amputations for talipes, tumors, elephantiasis, deformity, and others of a like character, with those of diseases of the joints, a wrong result must ensue; and, practically, this was found to be the case. He, therefore, divided these cases into pathological amputations and amputations of expediency, choosing the latter term as more accurately expressing the reason for the operation, as limbs are removed for tumor, talipes, elephantiasis, and deformity more from expediency than necessity; and he therefore suggested the use of such a term until a better was proposed. The author then proceeded to an analysis of the table of amputations, including one hundred and sixty-seven cases of pathological amputations, thirty-three amputations of expediency, seventy-six primary amputations, twenty-four secondary amputations; and having given in detail the analysis of each division, he summed up the whole in the following general conclusions:—1. That in amputations of the extremities, taken altogether, 25 per cent. are fatal; 30 per cent. in the lower extremity, and 10 per cent. in the upper. 2. That amputations, as a whole, are fatal in the following order:—Secondary, 50 per cent.; primary, 43 per cent.; amputations of expediency, 30 per cent.; pathological amputations, 12·5 per cent. 3. That in pathological amputations of the thigh, 18 per cent. are fatal, or 1 in 5·5; leg, 7·7 per cent are fatal, or 1 in 13·0; foot and upper extremity, success generally follows. 4. That in amputations of expediency of the thigh, 31·5 per cent. are fatal, or 1 case in 3·16; leg, 66·6 per cent. are fatal, or 1 case in 1·5; upper extremity fatal cases are exceptional. 5. That in traumatic amputations of the lower extremity, 60 per cent. are fatal; of the upper, 18 per cent.; and that traumatic amputations of the leg are, at least, as fatal as those of the thigh. 6. That secondary amputations are more fatal than primary. 7. That in amputation of the thigh for chronic disease of the knee-joint, 1 case only out of 7 proves fatal,* or about 14·5 per cent.; but for acute suppuration, a fatal termination is the rule. 8. That in amputations of the lower extremity for tumors, 36 per cent. are fatal; of the upper,

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* The fatality of excision of the knee, according to Butcher, is at least one case in five.

recovery may generally be expected. The author then proceeded to the more immediate subject of the causes of death after amputations; and having given two tables showing the different causes of death, and their proportions or percentages both to the fatal cases and the whole number of amputations, he went on to the analysis of each division, and having given a detailed account of each, he condensed the whole into the following conclusions:—*General Conclusions upon the Causes of Death in Amputations Generally:* 1. That 25 per cent. are fatal; 30 per cent. of the lower extremity, 10 per cent. of the upper. 2. That pyæmia is the cause of death in 42 per cent. of the fatal cases, and in 10 per cent. of the whole number amputated. 3. That exhaustion is the cause of death in 33 per cent. of the fatal cases, and in 8 per cent. of the whole number amputated. 4. That the following causes of death are fatal in the annexed proportions:—

		Of Fatal Cases.			Of Whole Number.	
Secondary hemorrhage,		7·	per cent.,	or	1·66	per cent.
Thoracic complications,		5·6	"		1·33	"
Cerebral	"	3·	"		·66	"
Abdominal	"	1·4	"		·33	"
Renal	"	3·	"		·66	"
Hectic	"	3·	"		·66	"
Traumatic	"	7·	"		1·66	"

Pathological Amputations.—1. That pathological are by far the most successful amputations, 12·5 per cent proving fatal. Such amputations of the upper extremity are generally followed by success. Of the lower extremity, 15 per cent. terminate fatally. 2. That pyæmia is the chief cause of death, proving fatal in 43 per cent. of the fatal cases, and in 5·4 per cent. of all pathological amputations; and when fatal, as a rule, it causes death within fourteen days of the operation. 3. That exhaustion, either from the shock of the accident or of the operation, from hemorrhage, or all three causes combined, is the cause in 33 per cent. of the fatal cases, or 4 per cent. of all amputations. 4. That secondary hemorrhage is the fatal cause in only 9 per cent. of the fatal cases, and in 1·4 per cent. of all amputations. 5. That hectic, abdominal, and thoracic complications act equally as causes of death in 13 per cent. of the fatal cases, and in 2 per cent. of all amputations. *Amputations of expediency:* 1. That 30 per cent. are fatal; but as amputations of the upper extremity are, as a rule, successful, the percentage of this operation upon the lower is much increased, 40 per cent. proving fatal. 2. That pyæmia is the chief cause of death, proving fatal in 60 per cent. of the fatal cases, and in 18 per cent. of all such amputations; and when fatal, as a rule, death takes place within fourteen days of the operation. 3. That death from exhaustion occurs in but 10 per cent. of the fatal cases; and that some thoracic or renal complication, or carcinomatous infiltration, are fatal causes in the same proportion. *Primary Amputations:* 1. That 43 per cent. are fatal; 60 per cent. of the lower extremity, and 30 per cent. of the upper. 2. That primary amputations are more successful than secondary. 3. That pyæmia is the cause of death in 43 per cent. of the fatal cases, and in 16 per cent. of the whole number, and that when fatal, the symptoms appear, as a rule, between the seventh and fourteenth days after the operation, and cause death in the third or fourth week, and not during the first two weeks, as in pathological amputations and those of expediency. 4. That exhaustion is the cause of death in 32 per cent. of the fatal cases, and in 12 per cent. of the whole number. 5. That traumatic complications prove fatal in 15 per cent. of the fatal cases, and secondary hemorrhage, cerebral or thoracic complications, about 7 per cent. each; renal disease proving a cause of death in 3·5 per cent. *Secondary amputations:* 1. That 50 per cent. are fatal; 68 per cent. of the lower extremity, and 12·5 per cent. of the upper. 2. That secondary amputations are more fatal than primary, by about 8 per cent. 3. That exhaustion is the chief cause of death, proving the cause in 60 per cent. of the fatal cases. 4. That pyæmia is the cause in 25 per cent. of the fatal cases; secondary hemorrhage and hectic in the remaining 15 per cent. *Conclusions upon Pyæmia as a Cause of Death:* 1. That it is the cause of death in 42 per cent. of all fatal cases of amputations, and in 10 per cent. of all amputations. 2. That it is the cause of death in the different forms of amputation in the following order: 1. In 70 per cent. of all fatal amputations of expediency. 2. In 43 per cent. of all fatal primary amputations. 3. In 43 per cent. of all fatal pathological amputations. 4. In 25 per cent. of all fatal secondary amputations; and that in amputations of expediency it is the most frequent cause, and in secondary amputations the least. 3. That in amputations for acute suppuration of the knee-joint, whether the result of an abscess discharging into the joint or otherwise, pyæmia is a more frequent cause of death than in amputations for chronic disease. 4. That it is the general cause of death in amputations for talipes, elephantiasis, and tumors. 5. That in primary amputations, and in amputations of expediency of the leg, it is a more frequent cause of death than in the same operations upon the thigh. 6. That, upon the whole, pyæmia appears to be a more frequent cause of death in amputations through limbs, the tissues of which are in a normal condition, and where a large surface of healthy bone is exposed. 7. That in pathological amputations, and in amputations of expediency, pyæmia, as a rule, proves fatal within fourteen days; but after traumatic amputations, the period of death is about the twenty-fifth or twenty-sixth day. *General Conclusions upon Amputations of the Thigh:* 1. That 27 per cent. are fatal. Pathological amputations, 18 per cent.; amputations of expediency, 31 per cent.; primary amputations, 60 per cent.; secondary, 75 per cent. 2. That in amputations of the thigh for chronic diseases of the knee-joint, about 15 per cent. are fatal, or 1 case in 7. 3. That amputations of the thigh for acute suppuration in the joint are generally fatal; and that pyæmia is the chief cause of death in these cases. 4. That exhaustion and pyæmia are causes of death in equal proportions, or in about 40 per cent. of the fatal cases, and in 10 per cent. of all amputations of the thigh. 5. That exhaustion is most fatal in primary amputations, and the least so in amputations of expediency. 6. That pyæmia is most fatal in amputations of expediency, and the least so in primary. 7. That primary amputations are, for the most part, fatal from exhaustion, 35 per cent. of the cases sinking from this cause, 15 per cent. from pyæmia, and secondary hemorrhage and traumatic complications, 5 per cent. each. 8. That exhaustion, pyæmia, and hectic are equally fatal causes in secondary amputations, proving fatal in 25 per cent. each. *Amputations of the Leg:* 1. That 37 per cent. are fatal; pathological amputations, 7·7 per cent.; amputations of expediency, 66·6 per cent.; primary amputations, 62·5 per cent.; secondary amputations, 66·6 per cent. 2. That amputations of the leg are 10 per cent. more fatal than of the thigh; the amputations of expediency and traumatic amputations being more fatal, and the latter more frequent. 3. That amputations of expediency of the leg are generally fatal, being twice as fatal as those of the thigh; that pyæmia is the chief cause of death in 75 per cent. of the fatal cases, and in 50 per cent. of all such amputations. 4. That in primary amputations, pyæmia is the cause of death in half the fatal cases, or in 32 per cent. of all such operations; exhaustion and visceral complications about 8 per cent. each. 5. That comparing primary amputations of the thigh and leg together, they are equally fatal; but that pyæmia is twice as fatal in amputations of the leg as in amputations of the thigh. 6. That half the cases of secondary amputations die from exhaustion; pyæmia and secondary hemorrhage being fatal in 8 per cent. each. 7. That taking all amputations of the leg together, 42 per cent. of the fatal cases die from pyæmia, and 32 per cent. from exhaustion. *Amputations of the Upper Extremity:* 1. That 10 per cent. are fatal. 2. That pathological amputations and those of expediency are, as a rule, successful. 3. That about 20 per cent. of traumatic amputations are fatal; 22 per cent. of the arm, and 16 per cent. of the forearm. 4. That one-third of these fatal cases die from pyæmia; one-third from some traumatic complication; and the remaining third from secondary hemorrhage or visceral disease.

Mr. Solly thought no one would dispute the utility of the paper. The statistics contained in it, however, extended over a great length of time, and referred more to the treatment of our ancestors than of the present generation. They must bear in mind that many of those cases which were said to be fatal after amputation, would be fatal independently of that operation; and although the amputation gave the patient a chance of life, yet that was all that could be said for it in such cases. It had been the rule in the hospitals with which he had been connected, never to make an amputation during an acute condition of the joint, as, unless that could be subdued, a fatal result might be expected. Some of the author's facts appeared to indicate that resection of the joint might often be adopted in preference to amputation.

Mr. Spencer Wells observed that, in a large proportion of the cases reported by the author, pyæmia appeared to have been the cause of death. He would like to ask, whether in Guy's Hospital the deaths from this cause were more frequent in the new than in the old buildings? The method of ventilation in the new portion of that hospital was not one which he should like to see generally carried out. The hospital-smell was very oppressive, and the air was hot and dry—conditions which he considered likely to favor the increase of pyæmia. In Paris, at the Necker Hospital, there were some old-fashioned buildings, with small rooms, dark, and not well ventilated; not at all the kind of buildings one would think desirable for a hospital. Subsequently they had erected some new buildings in connection with that hospital, constructed on the most approved modern principles, as regards ventilation, heating, lighting, etc., and with much larger wards, similar to the new rooms at Guy's. But it was shown, a few years ago, by M. Trousseau, that the mortality was greater in the new buildings than in the old. This was explained partly by the artificial system of ventilation, and partly by the fact of so many patients being in the same ward. He (Mr. Wells) would like to know if that was the case in the new portion of Guy's Hospital. He did not know whether operation cases had been put into the new building or not; but he thought the old buildings preferable to the new. He would like to know, too, how far the modes of wet and dry cleaning could be brought to bear upon the number of deaths from pyæmia, and what influence was produced by proximity to the dissecting-rooms. He had been informed, when at Strasburg, a few months ago, that at the hospital there the mortality from pyæmia was very considerable in those wards which were immediately over the dissecting-room; and that after removing all operation cases to the opposite side of the building, pyæmia had almost disappeared. This fact, he believed, might throw some light upon the same class of cases in English hospitals, and might justify the objection which the governors of our old hospitals had to the proximity of the dissecting-rooms to hospitals.

Mr. Birkett said that they had had no surgical cases in the new wards at Guy's Hospital at present, except some trifling operations; and pyæmia cases were almost unknown in them. Death had certainly taken place from pyæmia in one or two cases, but they were cases of simple wounds. It was a great pity, he observed, that the authorities of the different hospitals in London did not come to some arrangement to prevent the putting of surgical cases in the same ward as those where pyæmia cases had been placed. He could not help wishing also that they had better sanitary arrangements in the metropolitan hospitals, and that the governors of hospitals would consult their medical officers more frequently upon such arrangements.—(*London Medical Times and Gazette*, March 5, 1859.)

2. ON MANUAL COMPRESSION IN THE TREATMENT OF ANEURISM AND INFLAMMATION. By *Professor Vanzetti.* Dr. Vanzetti, Professor of Clinical Surgery at Padua, observes, in a recent communication addressed to the "Académie des Sciences," that although compression of the artery by the hand has occasionally been employed adjuvatory to other means of treating aneurism, yet this simple and natural method had never been proposed as the sole means of treatment, until he himself resorted to it. Since his visit to Dublin, in 1843, when he had the opportunity of observing the inconveniences attendant upon the production of compression by the aid of mechanical appliances, he has had in view the desirableness of substituting the action of the hand. It was not until 1853, however, that he first practically realized the idea. A mason presented himself with a popliteal aneurism the size of an orange, and after he had been prepared, by rest, diet, and nitre drinks, he was taught how to compress the femoral artery, and was directed to do this several times in the day. At the end of a fortnight, the compression was kept up more methodically, being continued, at intervals, so as not to weary the patient, for at least two hours at a time. Solidification then took place at the end of forty-eight hours. The tumor disappeared rapidly, and the man has continued well since. The second case occurred in the person of an officer of the Chasseurs, the popliteal aneurism being as large as a lemon. Having employed occasional compression of the femoral at home at intervals during a month, he came to the hospital, and

then five hours' continuous compression, kept up by the pupils, secured solidification. He is now on duty in the army. 3. A woman, aged 38, was admitted into the Padua Clinic, with a frightful protrusion of the left eye, this having originally commenced during the throes of labor. As all the symptoms of aneurism of the ophthalmic artery were present, compression of the left carotid was put into force. The intervals were very short, for if continued for more than a minute, the pressure produced faintness. After four days all sounds and pulsations had ceased, and a few days later the eye reassumed all its normal characters. 4. The next case was an aneurism at the bend of the elbow, under the care of Professor Gherini, of Milan; and manual compression of the brachial produced solidification in three and a half hours. 5. Dr. Gelmi, of Verona, treated a case of popliteal aneurism by means of pressure of the femoral, first for two or three hours, and then for one or two hours per diem; and by the twentieth day the leg had resumed its normal condition. 6. A patient came under Professor Riberi's care at Turin, with an aneurism at the lower third of the femoral, and which had ensued on a fall. Four hours' compression produced the necessary solidification. 7. In the case of a woman who suffered from protrusion of the eyeball, dependent on aneurism, compression was made on the carotid during five minutes five or six times in the twenty-four hours. On the seventeenth day, and after 440 minutes of compression, all appearance of projection had been removed. The reason that indirect manual compression has not excited earlier attention, as a means of treating aneurism, is probably the idea that it required very long continuance. The cases related, however, prove that the time is in reality very short, and the compression being employed intermittingly, is attended with neither pain nor danger.

Encouraged by his success in the treatment of aneurism, Professor Vanzetti has resorted to manual compression in the case of inflammation of the limbs, whenever the artery has been accessible; and such success has attended its application to the femoral, brachial, and subclavian arteries in phlegmon and arthritis, that it now forms the ordinary means of treating such cases at the Padua Clinic whenever it is practicable. Employed promptly, it soon may arrest the progress of the inflammation, more time being required when the process has been set up during some period. In the case of severe or much advanced inflammation, although not of itself competent to effect a cure, it is the most powerful adjuvatory means. In the face of the great advantages derivable from this means, we must not be deterred by apparent difficulties in the execution. Persons can be generally got to make the compression, or the patient may be taught to do this; and, in a case of great urgency, the surgeon himself should perform it for two or three hours. In general, compression need only be kept up for eight or ten minutes, and, after resting, again resumed. The professor relates two cases as remarkable examples of the efficacy of this treatment: one being an instance of a bad phlegmonous erysipelas of the arm, treated by compression of the subclavian; and the other, a case of acute arthritis of the wrist, treated by compression of the brachial.—*Comptes Rendus*, t. xlvii. pp. 471–5, and *L' Union Méd.* 1858, No. 58, No. 115.

The Annali Universali de Medicina for July, 1858, contains notes of two additional cases of aneurism of the ophthalmic artery treated by digital compression with success. One of these is related by Dr. Gioppi, Professor of Diseases of the Eye, at Padua, and the other was communicated by Dr. Scaramuzza, of Verona, to Dr. Vanzetti, for publication. Dr. Vanzetti appends to the case the following summary of the general subject of digital compression:—1. The dominant principle of the treatment is that the compression should be complete and intermitting. 2. Complete compression, when made by the finger, is not painful. 3. Complete compression, made during a given time, produces an immensely greater effect than does incomplete compression continued for a like period. 4 Incomplete compression may, however, be resorted to when any local or general circumstances do not allow of its being made completely. 5. The compression may be intermittent, for being complete, it is powerfully efficacious in effecting solidification, even when continued for a brief space of time at short intervals. 6. The person employing it should continue it until his hand has need of rest, and he should resume it when this has been obtained, discontinuing it during the night, in order that the patient should enjoy his sleep undisturbed. 7. The patient can compress for himself the femoral, radial, branchial, carotid, and frequently the subclavian, and can continue it for about five to eight minutes. 8. The rapid cures obtained by Gherini and Riberi by means of compression continued uninterruptedly for a few hours, have not been attended with any accident. 9. The causes why an aneurismal tumor, which has ceased to pulsate after continuous compression for some hours, may, perhaps, as happens sometimes after the ligature, in place of solidifying, inflame, suppurate, or become gangrenous, are not as yet well known, and call for further study. 10. It is possible that the cruor does not become solidified, or softens in consequence of a pre-existing morbid condition of the sac, or owing to the disturbance of the capillary circulation of its parietes; and that the inflammation and subsequent gangrene of these may be the cause and not the effect of the successive changes in the coagulated cruor. 11. By the employment of complete and intermitting compression, the practitioner may cure his distant patient in two visits. At the first he teaches him how to make compression himself; and at the second visit, made two or three weeks afterwards, accompanied by an assistant, he makes complete and continuous compression during a few hours, which will suffice to complete the commenced solidification, if it be not already completed. 12. No application should be made to the limb, which must be laid in a comfortable position. Compression in certain cases sufficing alone, may in others be aided by Valsalva's preparatory treatment, which, if superfluous in many cases, may be highly necessary in others. In the *Annales d'Oculistique*, November, 1858, is a translation of an interesting paper by Professor Gioppi, of Padua, in which, after taking a survey of the present state of our knowledge concerning aneurism of the ophthalmic artery, he relates a case in which digital compression proved completely successful.—(*London Medical Times and Gazette*, March 19, 1859.)

3. A CONTRIBUTION TO THE STATISTICS OF CANCER; COLLECTED FROM THE RECORDS OF THE MIDDLESEX HOSPITAL. By *Septimus W. Sibley, Esq.*, Lecturer on Pathological Anatomy at the Hospital.—This communication is the result of an examination of 519 cases of cancer, together with the records of 172 post-mortem examinations. The more recent cases had been reported with unifor-

mity and with some degree of fullness ; some of the older cases were less perfect. In the first place the diseases embraced within the limits of the paper are defined, and what had been excluded from consideration. A table is then given, in which the seat of the primary cancer in each of the 519 cases is exhibited. There were 103 instances in the male, and 416 in the female; among the latter there were 191 of the breast, and 156 of uterine cancer.

The ages of the patients are next stated. There were three examples under the age of ten, (all males,) and one between the age of ten and twenty. Tables are given, in which the ages are arranged in decennial periods, the cases of breast and of uterine cancer being placed in separate groups. The average age of those attacked with uterine cancer was 43·28 years; with breast cancer, 48·6.

Effect of marriage, pregnancy, etc.: Of the female cancer patients, 83 per cent. either were or had been married, and among the single women the disease occurred oftener in the breast than in the uterus. Of the married women, 86 per cent. of the uterine, and 74 per cent. of the patients with breast cancer, had borne children. The average number of the births was 5·2 among the former, and 3·89 among the latter. The interval between the last pregnancy, and the proportion attacked before and after the cessation of the catamenia, are also given.

The duration of life (from the first discovery of the disease) in patients who had not been operated on, varies greatly in the different classes of cases. In the breast it is 32¼ months; in the uterus, 14; in the stomach, 8½; in the rectum, 34; in the lip, face, etc., 53; in the penis, 34½; in the bones, 10; in the labium, 29. These figures are not perfectly comparable, as in some cases, especially the external cancers, the period given is the entire duration of the disease, while in others (as in the stomach) the period is only that during which the symptoms were present.

An account is then given of the operations (by the knife) in cases of cancer of the breast. Three patients out of 60 died from the effects of the operation. The average duration of life of those who were operated on, was 53·2 months. In comparing this with the duration of life in cases in which the disease was allowed to run its natural course, (35·25 months,) it should be remembered that the cases submitted to operation are more or less selected cases.

As to the hereditary nature of the affection, the difficulties in obtaining accurate information upon this point are first alluded to. The chief of these is the very imperfect knowledge which most people, but more especially hospital patients, possess of the diseases to which their relatives have been subject. Out of 305 cases, in which the point had been particularly inquired into, 34 patients remembered to have had a relation affected with cancer. A table is given of the seat of the disease in each of the 34 cases, in 17 of which the breast was the part affected. Tables are also given, in which the degree of relationship of the cancerous relative is shown, and also the proportion affected on the father's and on the mother's side. Out of the 34 cases, in six, more than one relative was cancerous; and in one instance (the chief features of which are mentioned) no less than five relations suffered from cancer.

The existence of phthisis in different members of a cancerous family is also adverted to. This disease existed in 50 families out of 130. Similar tables to those before mentioned are given, in which the degree of kinship is exhibited; it being also noted whether the disease was on the father's or the mother's side.

The notes of the 172 post-mortem examinations are next analyzed. In the first place, a table is given, in which the seat of the primary cancer in each instance is exhibited. The cases are then arranged in the following groups: 1. Cancer of the breast. 2. Cancer of the uterus. 3. True cancer of other organs. 4. Epithelial cancer. A series of tables follows, in which the secondary cancers are enumerated, and the cases arranged as follows: *a.* The disease strictly local. *b.* Involving also the lymphatics of the part. *c.* Involving the lungs and other parts, the liver being unaffected. *d.* The liver cancerous, the lungs being free from this disease. *e.* Those cases in which there were tumors in distant parts of the body, but both the lungs and liver were free from the disease. Moreover, in each form of the affection, a list of the non-cancerous diseases found in the bodies of the cancer patients is appended.

The bearing of the foregoing facts on the mode in which cancer is disseminated throughout the body is next alluded to, three distinct modes of multiplication being recognized: 1st, the growth of tumors in the immediate neighborhood of the cancer; 2d, the development of cancer in the lymphatics of the part; 3d, the formation of cancerous tumors in distant parts of the body.

In regard to the cachexia, it was noticed that this condition only became developed as the ulceration and sloughing extended, and could not be attributed to pre-existing changes in the condition of the blood of the patient. In nearly all instances the patient died from the ordinary effects of ulceration, or from the interference with vital functions.

Dr. Webster believed the disease was much more frequent among females than males. It was a very fatal disease in this country, the average number of deaths yearly in England and Wales being about 6000. The general proportion was two females to one male, but the proportion of females in the metropolis was somewhat greater. He inquired if chimney-sweeper's cancer was less frequent in the present day than in former years, in consequence of recent legislation prohibiting the ascent of chimneys by young boys?

Mr. Hale Thomson inquired whether the author had the slightest knowledge of, or belief in, any cure for cancer? as he (Mr. Thomson) had not. The cancer might be temporarily removed by the knife; but in his experience the disease had always returned.

Mr. Arnott observed that the author had collected his facts with the greatest care, and the results he had arrived at were of the greatest importance to the profession. It had been a common idea that cancer occurred much more frequently in barren than in unmarried women. Mr. Sibley's investigations had set the matter at rest, by showing that a very small proportion of the patients in whom the disease occurred, were barren. The author had also mentioned another important fact, namely—that in cases of cancer of the mamma, the patients in whom the operation of extirpation had been performed, lived two years longer than those in whom the disease had been allowed to run its course. The general opinion, however, had been that the operation accelerated the disease, and favored its rapid progress. Another point of much importance was the number of cases in which the disease was found to be purely local, one-half of the whole number having been shown to be of that character.

Mr. Birkett had been struck with the small number of cases collected by the author in which an operation had been performed, compared with the large number of patients not operated upon. He had had it in contemplation to bring before the Society the results of an examination of a very large number of cases; and rather than make a selection in the ordinary way, which might lead to error, he intended to take the first hundred cases that died under his own observation, upon whom no operation had been performed, and then the next hundred that died upon whom an operation had been performed. The latter were, of course, to a certain extent, selected cases, because no surgeon would at once operate in a case which manifested appearances unfavorable to success ; yet in many of the cases the operation could hardly be expected to prove of great ultimate benefit, and was only intended to remove a great source of local trouble and misery from the suffering patient. The average length of life in the cases in which an operation had not been performed, was three years and a half, and in the cases where an operation had been performed, it was four years and a half; thus giving the patient operated upon the benefit of one year's duration of life. He had also found that those upon whom the operation had been performed, were benefited in another respect, inasmuch as although the disease returned, it did not return with the same virulence in the part primarily affected. In some few cases the patients were relieved from any local disease at all. In the cases quoted by Mr. Sibley, the duration of life was much shorter than in those that had come under his own observation. One of the patients who died had been the subject of cancerous development, primarily in the breast, and extending over the body, upwards of thirty-two years. She complained that her first surgeon did not remove the disease, but she lived for twenty years without any trouble or annoyance. Another case lasted thirty-two years from the development of the primary growth. The subject was operated upon by Mr. Key, and was free from disease for twenty-five years. She then went to the hospital with disease on the opposite side, and died in about three years. In another case the patient lived about twenty-eight years after the primary growth was removed. Out of the three hundred patients whom he had known to die of cancers, he did not believe there were more than four or five who had not had a secondary development. The mortality arising from operations, he believed, was very much over-estimated: it was supposed to be above 10 per cent.; but in the hospital with which he was connected, it certainly did not reach 5 per cent.

The president, in answer to one of Dr. Webster's questions, stated that the Act respecting chimney-sweeps was limited to children from ten to thirteen years of age, whereas epithelial cancer did not present itself till a later period; so that the disease was not affected by the Act in question. So far as his own observation went, there had been no diminution of epithelial cancer within the last fifteen years.

Mr. Sibley regretted the smallness of the number of his cases in which operations had been performed. The records of such cases were often incomplete, as patients were lost sight of after leaving the hospital. The number of cases in which the records were complete, was sixty. There could be no error, however, in comparing a large number of cases of patients who died without an operation, with a smaller number in which the operation was performed, the result only being that in a larger number the average would be more correctly ascertained.

Mr. Moore observed, on referring to a portion of Mr. Sibley's paper, he found it stated that of the author's 519 cases, 103 occurred in males, and 416 in females.—(*London Lancet,* March 19, 1859.)

4. RECENT STRABISMUS CURED BY REMOVAL OF NECROSED BONE FROM A WHITLOW. (Under the care of *Mr. Hulke.*) The influence of peripheral sources of irritation upon the nervous system is well known. Teething and convulsions, lumbrici and epilepsy, are familiar examples as regards the great centres themselves. Instances of the sympathetic affection of single nerves, or of isolated groups of muscles, although less frequent, are by no means uncommon. We mentioned, two months ago, a case confirmatory that tænia in the intestine sometimes cause a circumscribed patch of alopecia on the scalp, and a severe but localized headache. Strabismus in young children sometimes supervenes, apparently in connection with worms. The subjects of the curious manifestations of nervous sympathy are, however, almost always either children or delicate women, in whom the cerebro-spinal system is peculiarly susceptible. The following case exemplifies the occurrence of a squint, in an adult man, seemingly in consequence of the irritation caused by a whitlow. At any rate, the squint came on coincidently with the necrosis of the terminal phalanx of one finger, and was wholly cured by the removal of the dead bone.

Owen Jones, aged thirty-seven, applied at the Royal London Ophthalmic Hospital, September 24, 1858, for advice about his left eye. He gave the following account of his case:—

Seven weeks previously, a whitlow came on the last phalanx of the thumb of his left hand; this was followed by inflammation of the lymphatics, and the gland above the elbow and those in the armpit became enlarged and very tender. The whole arm was very painful. While the limb was in this condition, one morning, on getting up, he found that he saw double, and had a squint in his left eye: this induced him to come to the Ophthalmic Hospital. It was found that he had complete paralysis of the ext. rectus muscle, and could not turn the eye out beyond the middle line. He also complained of severe circumorbital pain. He was directed to poultice the whitlow, which had burst; to foment his arm, and keep it up in a sling, on the supposition that the pain about the orbit and the paralysis of the outer rectus might depend on periosteal inflammation. Iodide of potassium was prescribed, which he took till November 23d, without any improvement of the eye. The enlargement of the glands in the armpits and above the elbow, and the swelling of the arm, had quite subsided. A loose bit of dead bone could be felt through a sinus on the under surface at the end of the thumb. It was extracted with a pair of dressing forceps.

30th.—He states that all pain in the arm, and about the orbit, left him soon after the removal of the dead bone. The squint also disappeared. He can turn the eye out till the margin of the cornea nearly touches the canthus. It is only when he looks to his extreme left that he sees double.—(*Medical Times and Gazette,* January 29, 1859.)

OBSTETRICS.

Report on the Cases of Ovariotomy that have occurred in Germany. By *Gustavus Simon.*—The statistics of ovariotomy hitherto published in Germany have been mixed up with English and American cases; and the object of this paper is to give an account of those operations which have been performed in Germany alone. As the operation has only become at all frequent there during the last ten years, it is still possible to obtain an exact account of the great majority of the patients, both as regards the operation itself and the ultimate fate of the individual. To make this as complete as possible, not only has the author referred to all the published cases, but has opened up a correspondence with the surgeons of all the chief towns of Germany. In this way he has collected sixty-one cases, twenty-three of which have not hitherto been published; and these must embrace the greatest part of those which have occurred, although it is still possible that some may have escaped notice. All foreign operations have been rigidly excluded, even when they have been performed by Germans in adjoining countries. The results of these researches are set forth in tables extending over from twenty to thirty pages. In these he gives not only the particulars of each operation as regards the mode of execution, the presence of adhesions, and the condition of the tumor, but also narrates the history of the patient both prior and subsequently to its performance, as also her later condition, whenever an account of this has been obtainable. Some of the cases, in spite of every care, remain defective in certain of these particulars.

The aim of the tables is to bring out as distinctly as possible the advantages or disadvantages of the operation; and the better to do this the cases of ovariotomy have been arranged under three divisions, viz., 1st, those in which the operation has been followed by a radical cure; 2d, those in which death has been the result; and 3d, those cases in which, although recovery has followed the operation, the advantage has proved transitory, doubtful, or non-existent. In this last category not only have been included those operations which, begun, have had to be abandoned on account either of the firmness of adhesions or the errors of diagnosis, but others in which, although the patient has recovered from a partially or completely executed ovariotomy, yet has died eventually from after-consequences of the same, or from the effects of the original disease. Thus, a case of Martin's has been so placed, in which the patient died eight months after a successful extirpation of a colloid cyst, owing to cancerous formations in the pancreas, lymphatic glands, and the lungs, which the operator himself regarded as connected with the original malady. So also with regard to a case of Küchenmeister's, wherein ovariotomy was left incomplete on account of the firmness of the adhesions, the patient recovering from the effects of the operation, but dying in three-quarters of a year from the rupture of a secondary cyst. Operations like these cannot be set down as radical cures, but must be regarded as of only transitory utility, if of any utility at all, for the prolongation of life. Although these patients felt themselves entirely well for some time after the operation, (in Martin's case for four months,) it is very questionable whether they would not have lived longer still had mere palliative punctures been resorted to. Under the same category must in future be placed those cases in which, after complete recovery from the operation, death still eventually takes place owing to the persistence or subsequent formation of abdominal fistulæ; those cases in which, very soon after the extirpation of medullary sarcoma of the ovary, cancerous formations appear in other organs; and finally, not only those cases in which secondary cysts spring up after incomplete extirpation, but also those where, after the extirpation of one diseased ovary, the cysts existing simultaneously in the other, forthwith increase and assume a similar threatening aspect. Each of these three primary divisions of the cases, derived from the issue of the operations, are formed into three subdivisions, dependent upon the nature of the operation and condition of the disease, viz., 1st, cases of ovariotomy completed; 2d, cases in which ovariotomy was attempted, but only incompletely performed or entirely abandoned on account of the strength of the adhesions; and 3d, cases in which, after the abdominal cavity had been opened, the diagnosis was found to be erroneous. This last subdivision, which does not strictly belong to the statistics of ovarian tumors, has nevertheless been retained, because, in judging of the danger of an operation, errors of diagnosis frequently cannot be avoided, and their consequences must not be lost sight of. It is not indeed likely, at the present period, that Dohlhoff's error, committed in 1838, of seeking to perform ovariotomy where no tumor of the abdomen existed, will be repeated; but it is continually happening that tumors of the uterus, retro-peritoneal tumors, etc., are confounded with ovarian tumors.

It is evident that the bearing of the statistical tables must be more exact upon German practice than those hitherto published in which English and American cases have played the chief part. In these we have only the results of the practice of German surgeons, (some of the most distinguished among these,) whose capability of forming the diagnosis and executing the operations can be appreciated. But it is believed that these new statistics are not only of more measurable value to the German practitioner than any that have preceded them, but may also serve even in other countries as a basis for forming a judgment concerning ovariotomy. If the tables already published comprise hundreds of cases, while these only related to sixty-one cases, yet the former were open to various important sources of error, which in these it has been sought, as far as possible, to avoid. Without referring to instances in which cases have been entered both under the names of the operator and the reporter, we may advert to two sources of error which must exert a good deal of influence on the conclusions to be drawn. The chief defect is that while cases which terminate favorably are made as public as possible, many cases having an unfortunate issue have been unrecorded. Of course it would be entirely unjustifiable for an operator to publish his successful and conceal his unsuccessful cases. But how many operators have only met with unsuccessful cases, and how many, after having published successful cases, have later met with only reverses! A great number of such cases would never be published at all; for while, on the one hand, we can scarcely blame an operator who has met with unsuccessful cases if he wait before publishing them until he has others of a more fortunate character to place by their side; so, on the other hand, ovariotomy has become so very common an operation, especially when unsuccessful, that an operator would incur the charge of tiresomeness if he published cases of failure of the operation, unless these exhibited special circumstances of great interest. How important these considerations are, however, in weighing the conclusions to be drawn from published cases, may be judged by examining R. Lee's statistical account, published in the thirty-fourth volume of the *Medico-Chirurgical Transactions*. With all his sources of information he was only able to indicate 51 operators, who had performed 162 operations; but in a country where practitioners are numbered by thousands, in which ovariotomy has been recognized as a permissible operation for twenty or thirty years, and where it has become so common that Clay has performed it 69 and Bird 31 times, can we believe that this operation, which neither requires dexterity acquired only by long practice, nor complicated instrumental apparatus, has only been performed by 51 persons? This is quite incredible; for in Germany, where the operation still has many and important opponents, there have been 34 operators for 61 operations. A second important source of error, vitiating the early statistics, consists in the enumeration among the cures, cases in which the operation had to be abandoned either on account of the adhesions or the faulty diagnosis. Now, although these women recovered, inasmuch as the disease still remained, and the patient had incurred the great danger due to gastrotomy, these cases should be regarded not as recoveries from, but failures of, the operation. It is true that Lee has sought to avoid this error, and abstracts 60 such cases from the 162 operations; but he found it impossible to give an account of the latest condition of the cases set down as cured. These two sources of error, Dr. Simon has taken every pains to avoid; and he believes his statistics claim much more confidence than Lee's, which neither comprised all the cases that had occurred, nor sufficiently controlled those they did comprise. These statistics also show that in Germany errors of diagnosis have not been of such frequent occurrence —operations not having been undertaken with the same rashness as in England and America. While in 60 of Lee's 162 cases the operation had to be abandoned, either on account of adhesions or errors in diagnosis, this was the case in only 17 of the 61 German cases.

The following is the summary of the results, as specified in the author's detailed tables: Of the 61 patients upon whom ovariotomy was either executed or attempted, 44 ($72\frac{8}{61}$ per cent.) died from the immediate effects of the operation; in 5 ($8\frac{2}{61}$ per cent.) it proved useless, or of only transitory benefit, although the patients recovered; and only in 12 patients ($19\frac{41}{61}$ per cent.) was a radical cure obtained. (The operation may even have been more unfavorable in Germany than here represented, as notwithstanding the search made for them other unsuccessful cases may not have been brought to light.) The operation was completely executed in 44 instances. Of these 44 there died 32 ($72\frac{8}{11}$ per cent.) from the immediate effects of the operation; one died eight months after in consequence of cancer in other organs; and 11 (25 per cent.) were radically cured. The operation was attempted in 15 cases, but on account of the firmness of the adhesions had to be abandoned or only partially performed. Of these, in one a radical cure followed, in three no advantage, or very transitory advantage, resulted, and in 11 death ensued as the immediate consequence of the operation. In two cases the operation was attempted; but the diagnosis was at fault; one of the patients died, and the other recovered.

These results are far less favorable than those which have been derived from statistics previously published; and while Fock and others place the danger of ovariotomy upon the same line as herniotomy and amputation of the thigh, it is, according to the above figures, more dangerous to life than the Cæsarean section, which is, according to Kaiser, attended with a mortality of 63 per cent., and, according to others, of about two-thirds of those upon whom it is performed.

In a postscript, Dr. Simon brings the cases up to 64 in number. In these a radical cure was effected in 12, in 6 the operation was at most of transitory utility, and in 46 it was followed by death.—*Scanzoni Beitrage zur Geburtskunde*, band iii. pp. 98, 142.—(*Medical Times and Gazette*, February 19, 1859.)

PRACTICE OF MEDICINE.

RETROSPECT ON THE USE OF RAW MEAT IN THE DIARRHŒA OF WEANED CHILDREN (DIARRHŒA ABLACTATORUM.) By *Dr. J. F. Weisse*, Director of the Children's Hospital at St. Petersburg. Seventeen years have now elapsed since I first directed the attention of the profession to this invaluable remedy in the above disease; but it was not until I had five years later treated of the subject at greater length, that it came into more general use. Soon after the publication of the latter paper, I received from the esteemed editor of the journal just now quoted, Dr. Behrend, of Berlin, a letter containing the following passage: "You have no idea what interest your communication on diarrhœa ablactatorum, and on the use of raw meat, has excited; we now use the remedy extensively."

Not long after, Dr. Behrend inserted in the sixth volume of his journal a letter of M. Marotte, Physician of the Central Bureau of the Parisian Hospitals, from which it appeared that this subject had attracted great attention also in the French metropolis. The author of this letter, which is addressed to Dr. Trousseau, has, moreover, had the kindness to suggest a theory explanatory of the results I have obtained. From this time the meat cure was generally received, and its utility admitted on all sides. Of the numerous favorable reports recently published, I cannot forbear literally transcribing that contributed by Dr. Eichelberg, because the author has given to the subject the appreciation it deserves. He says: "In consequence of the shortness of the time which has elapsed since this article of diet was first recommended, I have, it is true, only a limited number of observations (somewhat more than twenty) before me, but they all corroborate the remarkable advantage of the plan proposed. It is only in exceptional instances that such children refuse raw meat—the great majority, in fact, consume it with manifest relish. I have observed two very striking cases where the children for several weeks readily partook of this food with the most beneficial results, and at the end of that time suddenly refused it. Natural instinct seems in such examples to be unmistakable, as in the case of sick dogs, which eat grass. The want of osmazome made the children greedily consume the raw meat, but, with the cessation of the want, the desire for that principle disappeared."

As Herr Eichelberg, moreover, has expressly indicated the diarrhœa which sets in soon after the weaning of children (according to my observations usually in two or three weeks after that event) as the affection in which the raw meat cure is attended with certain success, so I have also, in recommending this mode of treatment, confined myself to the same disease; and now, after nearly twenty years' experience, maintain that raw, scraped beef, to the exclusion of all other medication, is a true specific in this destructive diarrhœa. I therefore consider a remark made by Charles Hogg, in recommending the well-known "beef-tea" of the English, to be quite erroneous. Thus he says: "Beef-tea is an excellent, nourishing, and easily digestible article of food, and completely replaces the juice of meat recommended by Weisse, of St. Petersburg, obtained by scraping raw flesh." I have in raw beef discovered, not an article of food for children, but a remedy against the diarrhœa in question; nor have I spoken of the juice to be obtained by scraping meat, but the muscular substance itself must be given to the children, having, however, previously been sufficiently comminuted, either by scraping with a knife, or by means of a grater, in order that it may be swallowed without trouble. But the principal point is, that the muscular substance itself, and not merely its juice, should be conveyed into the digestive tube. The English beef-tea has as little beneficial effect on diarrhœa ablactatorum as Liebig's excellent decoction of meat. Both these fluid aliments appear, precisely because they are fluid, to pass too quickly through the intestinal canal; while the meat in substance remains longer in the tube, and by its mechanical irritation may stimulate digestion, and it may, perhaps, also neutralize the acridity of the gastric juice. Nor can I participate in Dr. Beer's sanguine hope, that raw grated beef may be destined one day to dislodge cod-liver oil from the Materia Medica. Each of these excellent remedies has its definite sphere of medical action in the diseases of children: raw beef in the diarrhœa ablactatorum, cod-liver oil in rachitic affections, with and without atrophy.

In St. Petersburg the meat cure in the affection of children under consideration has become, so to speak, completely naturalized; and this has taken place rather through oral communication, and in consequence of the favorable results of the treatment, than from any paper or essay, as I have never published anything in that capital upon the subject. Most of my colleagues have now for several years made use of it, and they all assure me that they have obtained very satisfactory results, even in cases where the employment of other established remedies appeared to hold out no hope of cure. I have myself seen this treatment adopted in about two hundred children, and, in the majority, with the desired effect, provided recourse was had to it at the proper time. I say, at the proper time, for if the disease has already advanced too far, and, particularly, if it has assumed the form of the so-called gastro-malacia, it is only in exceptional instances that we shall obtain a cure. But even in this case there is no other remedy so calculated to allay the most tormenting symptoms, the tantalizing thirst, and the vomiting, as the raw beef. This beneficial effect is produced even after a few meals.

But it has recently been stated, as I have already publicly remarked, that in many children saved by the meat cure, tape-worm, and it is worthy of note, always the tænia solium, that is precisely the species which is not indigenous in St. Petersburg, has shown itself. A Dr. Braun has felt himself called upon to question this statement; two years later, however, an undoubted authority on this subject appeared in favor of the facts reported by me. Professor D. von Siebold, of Munich, says, in the last page of his interesting work, "Ueber die Band und Blasenwürmer," Leipsic, 1854: "We can no longer be surprised, or consider their statements fabulous, when physicians report that tape-worms have been found in certain patients after the use of raw meat prescribed as a remedy;" and in the note upon this passage he adds: "Compare on this subject Weisse's communications, which, notwithstanding Braun's objections, are worthy of all credit." Herr von Siebold directs particular attention to the fact that in every instance it was the tænia solium which was passed; and he considers it probable that this species of tape-worm, which is not indigenous in St. Petersburg, may have been conveyed thither in the undeveloped state in the flesh of oxen, brought from Tscherkask and Podolia.

Only a few weeks before my departure from St. Petersburg, in June of the present year, a tape-worm, more than four feet long, was sent to me by a colleague, to whom I had warmly recommended the meat cure in the case of a child, aged eighteen months, who had suffered from the diarrhœa in question, and was already very much run down, which worm was passed after the use of the ethereal oil of male fern. This remedy was administered in consequence of the child, who had long ceased to get the raw meat, and was cured of the diarrhœa, having repeatedly passed joints of tape-worm. The attendant physician had already correctly diagnosed the worm to be the tænia solium; I found that it was voided with the head, on which the suckers were plainly distinguishable under the microscope.

I should not omit to state, that in the Children's Hospital under my care, in the diarrhœas of older children, into which the element of dentition no longer enters, and which so largely contribute to fill the lists of mortality, raw meat has been repeatedly and unsuccessfully tried. These cases of diarrhœa generally depend upon ulcerations in the intestinal canal.

Lastly, I may be allowed to call the attention of the meeting to as palatable a remedy as raw beef, in the lientery of adults; I allude to oysters. In two cases, an amount of experience which, I must admit, goes for nothing, I saw the patients cured by the moderate use of these mollusca. From eight to twelve oysters were taken daily in two meals.—*Journal für Kinderkrankheiten*, January and February, 1858, page 60. (*Dublin Quarterly Journal of Medical Science*, February, 1859.)

THERAPEUTICS.

1. On the Use of Colchicum in Gout. By *Dr. Günsburg, of Breslau.*—As yet there being little known of the effects of colchicum, the following notice, communicated by Dr. Günsburg, may prove interesting. The author has used colchicum for five years in numerous cases. To older patients who had suffered

for a long time from gout, he ordered, during the painful paroxysms of swelling of the joints, one-sixtieth of a grain of the alkaloid three times daily. The remedy always acted as an intense stimulus to the intestinal secretion, even in such patients who were subject to constipation. After using the remedy from three to four weeks, patients who otherwise every few months suffered an attack, remained free from it for more than a year. Many a gouty person was thus saved from passing a painful and troublesome winter in the bed or easy chair. Dr. Günsburg has not yet tried the remedy in cases in which the articular swelling is accompanied by inflammation of the skin. Against all expectations colchicum proved of but little use in acute articular rheumatism, and after repeated trials Dr. Günsburg desisted from using it in cases of this kind.—(*Zeitschrift für Klin. Medizin.*, 1858.)

2. Glycerin in Chronic Laryngitis. By *Dr. Posner.*—In cases of chronic laryngitis in which patients complain of constant heat and dryness, and an uneasy tickling sensation in the throat, with continued inclination to cough, Dr. Posner of Berlin recommends the application of ten to fifteen drops of glycerin every hour, of which he has seen the most surprising results. He attributes the efficacy of the remedy to the circumstance that it lessens the irritation of the diseased mucous membrane by covering it with an emollient coat.—(*Medizinische Central Zeitung*, September, 1858.)

3. Glycerin in Hyperæsthesia Vulvæ, Erythema Nodosum, and Vaginitis. By *M. Paupert.*—1. M. Paupert used glycerin with excellent success in a case of *hyperœsthesia vulvœ*, accompanied by an eruption of ecthyma. The patient, a lady forty years of age, had suffered from this disease for several years, and had been under medical treatment all the time without obtaining relief. M. Paupert introduced compresses soaked in glycerin, into the vagina, twice a day, and ordered cold ablutions every morning and evening. The pruritus, as well as the ecthyma pustules, disappeared very soon; the cure was accomplished about three years ago, and the patient has had no relapse.

2. A man, twenty-eight years of age, suffered of *erythema nodosum* and general hyperæsthesia of the skin, in consequence of imprudent hydropathic treatment. The skin was dry, and its functional activity very feeble. The disease had become so vehement that even the mental faculties of the patient were disturbed to a high degree. M. Paupert ordered the whole body to be rubbed with glycerin twice a day, and after this treatment had been continued for several weeks, the itching and the eruption disappeared, the skin resumed its normal functions, and the patient was dismissed cured.

3. In vaginitis, with superficial ulceration of the collum uteri, a combination of glycerin (ʒj) with tannic acid, (grs iv.) which the author calls *glycerole de tannin*, has proved very useful; it removed within a short time the inflammatory symptoms, and promotes cicatrization of the ulcers.—(*Journ. de Méd. de Bruxelles*, Sept. 1858.)

Editors' Table.

Hydrological Tour.—In giving some sketches of what we would term a hydrological tour, of which the quest after Thermal Springs will be the first part, we would remind our readers of quite a large class of what are termed, somewhat contradictorally but, at the same time, quite expressively, stay-at-home travelers. These persons, at any rate some of them, have read so fully and studied so carefully the geography, topography and appearances of a foreign land, and have made themselves so well acquainted with its characteristic features and its productive industry, and with the government and social state and manners of the people who inhabit it, that they can converse as if they had themselves been abroad, with the regular and known traveler, with a feeling of previous companionship and of sympathy on objects of common interest. John Randolph, of Roanoke, especially, in all that related to England, was of this class, long before he went abroad, which was late in his life. It would not be necessary to make this introduction to our sketches of hydrological travel, were we not desirous that our readers should not be deceived by the title, and be led to believe that we had accompanied, in early life, a Humboldt and a Bounpland to South America, or, in later times, an Atkinson to Siberia, or a Prince Napoleon to Iceland, or been a member of the United States Exploring Expedition, and thus visited the islands of the Pacific. We have, indeed, traveled and voyaged a little on our own separate and individual account, but more frequently and largely with the parties just mentioned, in the spirit, and with a great number of others not now to be named, by making their works our companions, for lack of ability to associate with the authors themselves.

It is not for the sake of contrasts, and as if to show that the most raging natural furnaces and the hottest water are to be found in the midst of perpetual snow and on the border of the Arctic circle, that we begin our thermo-hydrological tour with Iceland. It is an island of anomalies in a hygienic as well as in a geological, and, in reference to its inhabitants, ethnological point of view. With all the recognized elements for the development of phthisis, depending on the asperity of its climate, and the most trying vicissitudes of temperature and weather generally, and a stinted supply of alimentary substances, this disease is said to be very rarely met with in Iceland. This is one of the increasing number of exceptional facts to the common theory held respecting the climatic influences in the production and cure or alleviation of pulmonary consumption. It is time to begin a revision of the whole subject.

Some reference was made, in our January talk, to the celebrated erupting or spouting springs of Iceland, the Great and the Little Geyser, and the Stokkr, and of their analogy to volcanos. The relation which this class of springs has to earthquakes, has been noticed in different instances. A remarkable illustration of this connection was afforded in the Stokkr, in the New Geyser, and the Roaring Geyser, on the earthquake of 1789, in the circumstances of the former having only acquired its present size and character as a great erupting spring, and the latter having ceased to eject water, after that catastrophe. The Great Geyser, the largest and the most wonderful example of the pseudo-volcanic springs, resembles the volcano, in its eruptions of water and vapor being intermittent, and occurring at intervals of from 24 to 30 hours. The vapor is projected into the air with the rapidity of an arrow, and includes in its interior a column of water which rises in the air to the height of 80 to 90 feet. Soon the vapory clouds are dispersed and allow the column of water to be displayed with its innumerable jets, which are projected in a straight line upwards, and then spread out like the branches of a pine tree, and finally descend in the shape of a fine spray-like rain. The maximum temperature of the water at the bottom of the Great Geyser, at a depth of 72 feet, is 280·5° F.; the minimum, 251·5° F. The temperature of the surface is 135·2° F. when the bottom stood at the heat just mentioned. At the point of issue the water forms a chasm. This measures at the top 60 feet, and is 6 or 7 feet in diameter. The Stokkr, the greatest source of thermal eruption in Iceland, next to the Geyser, is only distant 140 yards from the latter. It is a funnel-shaped well 44½ feet deep, with a mouth of about 8 feet in diameter; its bore diminishing downwards until, at the depth of 27¼ feet, it is only 10 inches. The surface of the water, between the eruptions, is generally from 10 to 13 feet below that of the ground adjacent. The temperature at the bottom was 239° F., and is diminished with the distance upwards. At the height of fifteen feet it was 237 5° F., and at the surface the thermometer stood at 212° F., or the boiling point.

Besides these periodically eruptive springs, whose prototype is to be found in the two just described, there is another species of intermittent or thermal springs, which is not manifested by the sudden occurrence of detonations of vapor, and whose eruptions are not distinguished by sudden and rapid eruptions of boiling water. The Little Geyser, which belongs to the group of Reckum, furnishes one of the most remarkable examples of this species. Its water-spout rises, on a line between the vertical and the lateral, in jets to about the height of 30 or 40 feet. In the district of the Great Geyser, successive changes are taking place in many of the thermal springs, by which some have lost their Geyser character, and others have been entirely closed by successive silicate deposits. These are seen, in some instances, to break out in other places. Farther downwards, but above the thermal region, which is now in full activity, there are several reservoirs filled with hot water, in the depths of which the older Geyser mouths may still be seen through the continually increasing deposits of silica which have accumulated in the course of ages.

Analyses of the water of the Great Geyser, made by different persons, have detected, but in very minute quantities, carbonate of soda, sulphates of soda, potash and magnesia, chloride and sulphide of sodium, and carbonic acid. Bunsen and Sandbergei found carbonate of ammonia. The collective amount of all these solid substances is very small; it being only 1·26 in 1000 parts of the thermal water. Silex and alumina originally dissolved in the water, are precipitated by evaporation, and are not present in the water analyzed. The process by which all the mineral waters of Iceland obtain their constituents, appears to be in a series of very remarkable decompositions to which the palagonite is subject, under the influence of volcanic gases. The predominant element in this rock is silica, which is also the most conspicuous feature in the thermal waters of the island. Next to the silica, we find in this rock, in large proportion, sesquioxide of iron, then alumina, and after these, and in minute quantities, potash and soda.

The Gas Springs, as they are called by Krug von Nidda, consisting of emissions of sulphuretted hydrogen and steam, the fumeroles of Bunsen, are quite common in this part of Iceland. The soluble silicates are brought to the surface with the thermal water, giving rise, when it is left to evaporate freely, to the formation of siliceous sinter and opal. Hot mud-springs were seen by Henderson in the crater of the Krafla. In the Mynata lake there are several hot springs which are known to be such by the great clouds of vapor rising from various points on the surface of the water. Even at sea, as mentioned in a previous talk, hot spouting springs are seen as at Reykafiord in Isafiord, where four of them may be detected by the ascending steam, and one *huer* or boiling spring at the surface of the water. In the valleys in which lakes Apavatic and Tingvalla are situated, there are at least one hundred hot springs, resembling those of Hawkadal, in the Great Geyser district, and, like these, they are divisible into water and gas springs, many of which are periodical.

On the western side of Iceland, on a long, narrow tongue of land, stretching far out into the sea, there is a line of mineral springs different from the greater number of those dispersed on the trachyte, a palagonite region on the eastern side of the island, or in that of Hekla. They have a comparatively lower temperature, are rich in carbonic acid, both in a free and combined state, such as, in the latter cases, in the carbonates of soda and lime more particularly; and with these are found chloride of sodium and sulphate of soda. On the other hand, silica and sulphuretted hydrogen occur only in extremely minute quantities. These are the Beer Springs referred to by Bunsen. Numerous hot springs are given out from the southern valleys of the island.

The most noted near the southern coast are the hot springs of Reikum, to the north of a wide estuary, or almost lake, of the River Elvas. The Reikum are intermittent erupting springs, although there are but two of them which throw up the water to a considerable height, or with any regularity. The temperature is 212° F. The chief of the Reikum group of springs is the little Geyser, which we must not confound with a spring to which Mackenzie has given the same name: situated about one hundred yards south of the Slokkr. If the earth around the springs is turned up, a steam constantly rises, and in some places the surface is covered with sulphur. Occasionally there was seen a slight efflorescence which tasted like alum. In the ground in this district a great number of boiling springs and steaming apertures make their appearance, and it requires no small degree of courage to walk among them, as it is impossible to say how thin the arch of clay may be which separates the traveler from the boiling abyss below. In many spots in this vicinity one can see the interesting process, described by Stanley, of the conversion of the material furnished by the soft red clay which abounds here, into hard stone, resembling jasper, which will strike fire from steel. In the valley is a large chasm filled with boiling water, on one side of which there is a spring which throws out its water in a perfectly horizontal direction, emitting at the same time a great quantity of vapor, and bellowing with a very disagreeable noise. At a short distance, again, from this spring, lies a large pool of turbid water, from which a considerable column of the same liquid is almost uninterruptedly thrown to the height of nearly twenty feet. In the same vicinity are springs ejecting hot water from the very bed of the river. The whole tract of Olfus, in which Beikum is situated, is much exposed to earthquakes. It would seem, indeed, to be on a line of subterranean communication between Cape Ruykearmies, in the southeast, to Hekla in the south, and thence to the volcano mountain, Yokuls or Jokuls, in the northeastern part of the island. Several vapor springs are also found about Reikum. Around the aperture of the largest of these springs is a bank of blue and yellow clay, on the surface of which a considerable quantity of pure sulphur appears, and in some places small streaks of alum are visible.

The hot springs of Reikiavik, the capital of Iceland, on the southwestern coast, are ten miles east of the town, in a volcanic district. Their temperature is 188° F. The water of the springs, mixing with that of the rivulet into which they flow, allows of every desired temperature, within a short space. Some large and deep pools of a tepid temperature are formed, in which, on a certain day in June, all the girls in the neighborhood bathe. We must hope that they go through this process at other times, although in a less ceremonial fashion. Mackenzie, taking a northern route from Reikiavik, along the western coast, visited the hot springs of Leira, the temperature of which is 138° F. On the road-side north from Leira and south of Huaneyre, and not far from the mouth of the River Huitaa, are hot springs, the water of which is 100° to 132° F. It is pure, and forms no incrustation. At the upper end of the Huitaa or White River we meet with the hot springs of Rickhalt or Reckiadal. On plunging the thermometer into those which could be approached with safety, it was seen to stand at 212° F. A little farther up the valley, there issues from the highest point of a rock, about ten feet high, in the middle of the river, a jet of boiling water several feet in height. In the middle of the rock there is a hole about two feet from its base; the water boils strongly; and again a similar phenomenon presents itself near the other end of this rock. Two miles farther up the valley there is an ancient bath, built six hundred years ago. Reversing the usual order of things, there is no cold water in the neighborhood of this bath, and hence they who intend to use it, wait till it is cooled down to the desired point.

Down the valley, and on the side opposite to that we have just described, and near to a group of cottages, are some thermal springs. In one place the vapor, which was 73° F., was received in a hut, and used as a vapor bath. Even at this reduced temperature, and in the month of July, it was probably twenty degrees higher than the medium of the daily temperature of the external air. The room was used both for a vapor bath, and for drying clothes. About a mile farther down, at the end of the valley, is the *Tungarhuer*, an assemblage of springs, described by Mackenzie to be "the most extraordinary perhaps in the world." One of these, called *Ar-Huer*, or the river spring, is unique of its kind. Two rocks, within a yard of each other, give issue to two springs, which give out their jets alternately, the one playing so soon as the other ceases; the interval of time between the two jets being about four minutes. Mackenzie called these ejections by the name of "*alternating Geyser*." Another spectacle meets the eye on this spot, viz., a vein of steam rising from the river itself, caused by boiling water finding its way through the river-bed. Some distance up the Huitaa is the hot spring of Sidcumele, the water of which shows a temperature of 76° F. The springs of Staffhold are six in number. Between them and the town is a field of lignite.

Near an extinct volcano, that of Kystardal, and several caves of lava, the traveler comes to a series of acidulous, called by the natives Ale springs. Not many miles farther, and still on the coast, the traveler comes to Stappla, from which towers the stupendous Snefell Yokull or Great Snow Mountain. Space is not given us to describe the hot springs near the northern coast of Iceland. The first to be named are the hot springs of *Reikialaug*, three in number, which have respectively the temperature of 114° F., 100° F., and 124° F. The next are the hot springs of *Reikeiverf*, the most remarkable of which are three in number. A truly volcanic region, with its widely distributed lava, sulphur mines, fumeroles, but water and mud springs and geysers and a smoking lake, opens out to the traveler at no great distance southeast from Husavick. Here he encounters Lake Myvatu, which is forty miles in circumference, has a moderate depth of say from two to four fathoms. Hot fountains boil up in the middle of the lake, and give out steam which is seen at a great distance. Reikiahlid, a farmhouse built on the lava which was poured out between 1726 and 1730, is on the north side of Lake Myvatu, is truly in a thermal neighborhood, one of the most prominent proofs of which is a natural hot vapor bath, supplied from a crevice in the ground, of the temperature of 144° F. This bath is frequented by people from a distance. Near to this place are vast beds of sulphur, giving out sulphurous exhalations through holes and crevices. To the east rises the Sulphur Mountain with its numerous burning quagmire and issuing springs. Near Krabla is the Obsidian Mountain. Along the eastern coast, and then the southern to near Reikum, we no longer meet with thermal springs.

On the whole route from Reikavik to the Geysers, in a line northeast, is Mufel, near which are several hot springs. On the margin of a small lake, called Lungavalla, are hot springs, some of them geysers, the eruptions recurring at irregular intervals.

Although in this brief and compressed notice of the thermal springs and thermography of Iceland we may fail to interest our readers, we have at least the consolation of knowing that the details are not accessible in any text book or compilation to which they can turn; and, so far, our dottings cannot be called stale or commonplace. Our next journey will be to a more congenial region.

MEDICAL STUDENTS AND GRADUATES IN THE UNITED STATES DURING THE SESSION OF 1858–59.—So far as we have been able to learn, the subjoined list of the medical classes in the different schools is correct. All the institutions of this country are not represented, as we have not been able to gather authentic facts in relation to them. By comparing this list with that published a year ago in this journal, it will be seen that more students were in attendance at the different colleges than the year previously.

	Students.	Graduates.
Jefferson Medical College,	570	256
University of Pennsylvania,	409	144
Pennsylvania Medical College,	109	33
Philadelphia College of Medicine,	75	18
University of New York,	351	128
College of Physicians and Surgeons,	180	58
New York Medical College,	107	25
University of Louisiana,	335	98
New Orleans School of Medicine,	140	36
University of Nashville,	436	103
Shelby Medical College,	53	11
St. Louis Medical College,	135	40
Missouri Medical College,	—	23
Kentucky School of Medicine,	103	28
University of Louisville,	—	35
University of Michigan,	143	—
University of Buffalo,	67	13
Medical College of Georgia,	165	58
Atlanta Medical College,	136	39
Oglethorpe Medical College,	—	13
Savannah Medical College,	34	8
Rush Medical College,	—	31
Transylvania Medical College,	18	6
Harvard University,	139	30
Medical College of Ohio,	139	32
Medical College of South Carolina,	195	—
Virginia Medical College,	70	20
University of Virginia,	107	—
Medical School of Maine,	50	—
University of Vermont,	80	20
Albany Medical College,	—	48
Dartmouth Medical College,	—	9

STUDENTS IN PHILADELPHIA.—We have every reason to believe that the medical classes in this city were larger during the past session than in any other city in the world. The number was 1163, an increase of 24 over the session of 1857–58. The graduating classes were also larger, showing 451 against 407 of the previous year.

PROFESSOR DICKSON'S INTRODUCTORY LECTURE.—This beautiful and eloquent discourse was delivered at the opening of the session of the Jefferson Medical College last October, in commemoration of Dr. John K. Mitchell, whom the distinguished author had intimately known from his early youth, when they attended medical lectures in the University of Pennsylvania. The production is characterized throughout by great elegance of diction, and is a noble tribute to the memory of a man whose name, for upwards of a quarter of a century, was closely and honorably identified with the history of medical teaching and medical science in this country. Those who were so fortunate as to witness its delivery, will not soon forget the good taste, deep pathos, and stirring eloquence displayed by the speaker. Altogether, the occasion was one of the deepest interest. The discourse should be widely disseminated among the profession.

THE STATE MEDICAL SOCIETY OF PENNSYLVANIA will convene in this city on the second Wednesday in June. A full attendance is expected.

PHILADELPHIA COLLEGE OF PHARMACY.—The number of students in attendance at this institution during the last session was 88. The degree of Graduate in Pharmacy was conferred on 21 gentlemen. The valedictory address was delivered by Professor Bridges, well known as an able teacher and accomplished chemist.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.—The graduating class of this young and flourishing institution was larger during the past session than that of any previous year. The number was 25, while that of the matriculates was 48.

PENNSYLVANIA HOSPITAL.—The vacancy of consulting physician at this institution, occasioned by the resignation of Dr. Pepper, has been filled by the appointment of Dr. John Forsyth Meigs. We congratulate the managers and medical staff upon the acquisition of a gentleman who enjoys so well-earned a reputation as an author, and who has exhibited such zeal in the pursuits of his profession. We are confident that Dr. Meigs will make good use of his observations, and that his instructions will be of great benefit to those who may avail themselves of them.

NEW MEDICAL SCHOOL.—A faculty has been recently organized at Mobile, Alabama, for the founding of a medical college. Dr. J. C. Nott has the Chair of Surgery, and will sail for Europe early in May, for the purpose of purchasing a museum and apparatus for the institution.

ALBANY MEDICAL COLLEGE.—As will be seen in our advertising sheet, the annual course of lectures in this institution will commence, as formerly, on the first Tuesday of September. But one term will be held yearly.

CHANGES IN MEDICAL SCHOOLS.—Pennsylvania Medical College: We learn that Dr. Stillé, who for a number of years so ably filled the chair of Medicine in this institution, retired from it a short time ago. As yet no successor has been appointed.

Dr. E. Geddings has again become united with the Medical College of South Carolina, having been appointed to the chair of Medicine, rendered vacant by the death of Dr. Gaillard.

In the Albany Medical College, Professors Hun and Dean have resigned their chairs.

Professor Townsend unites Physiology and Materia Medica, and Professor Quackenbush lectures on Obstetrics and Medical Jurisprudence.

Professor M. A. Johnston has resigned the Chair of Physiology and Pathology in the Rush Medical College of Chicago. We have not heard of the appointment of his successor.

Professor Sandford B. Hunt has resigned the Chair of General and Descriptive Anatomy and Physiology in the University of Buffalo. The chair has been divided, and Dr. Sandford Eastman has been appointed Professor of Anatomy, and Dr. Austin Flint, Jr., Professor of Physiology and Microscopic Anatomy. We congratulate the faculty upon these appointments, especially of the latter gentleman, who, although a recent graduate, is well known by his contributions to medical periodical literature, and as the editor of the Buffalo Medical Journal. As a hard worker in his profession, with high ability and attainments, we can safely predict for him a career of future honor and usefulness.

UNIVERSITY OF THE PACIFIC.—We learn from a circular that a medical college has been organized in San Francisco, with the following corps of professors: T. Morrison, M.D., Pathology and Practice of Medicine; Isaac Rowell, M.D., Chemistry; R. Beverly Coley, M.D., Physiology, Obstetrics, and Diseases of Women and Children; E. S. Cooper, M.D., Anatomy and Surgery; B. R. Carman, M.D., Materia Medica; and Hon. George Barston, Forensic Medicine.

The course of lectures will commence on the first Monday in May, and continue four months. We wish the faculty every success in their new enterprise, and think the establishment of a medical school in California must eventually be crowned with success.

NEW MEDICAL JOURNAL.—We have received No. 4 of the *St. Joseph Medical Journal of Medicine and Surgery*, under the editorial management of Drs. T. H. Crane, O. B. Knode, and G. C. Callett. This little bi-monthly is well conducted, and we place it on our exchange list with pleasure. The editors will oblige us by sending the first three numbers.

AMERICAN VETERINARY JOURNAL.—One year ago we took occasion to speak of this journal and to commend it to the notice of our readers, expressing our conviction that a periodical of this kind, edited by a competent gentleman, was much needed. We have now to record its suspension, the reason for which will be readily seen from the following pointed circular of Dr. Dadd. The subscription was but one dollar a year:—

"I take the liberty to inform you that the publication of the 'AMERICAN VETERINARY JOURNAL' is suspended with the March issue. The only explanation I have to offer is, that in consequence of remissness on the part of subscribers for the past two years, my pocket-book is now the seat of a very severe attack of dyspepsia, which threatens to confine me and my family to a diet of shorts."

ACETATED TINCTURE OF CIMICIFUGA.—In our January number we gave a formula for the preparation of this remedy, and we have received a note from Dr. Koehler, in which he states that instead of using dilute acetic acid, it should be employed in its pure state.

DISCOVERY OF THE CIRCULATION OF THE BLOOD.—We understand that a translation, from the pen of our esteemed collaborator, Dr. J. O. Reeve, of Ohio, of Flouren's "History of the Discovery of the Circulation of the Blood," will appear about the first of May, from the publishing house of Rickey, Mallory & Co., of Cincinnati. From the ability of Dr. Reeve, we are confident that the American edition will be a faithful and elegant translation of the French.

TO DR. PREYSS, of Vienna, the able editor of the *Oesterrichische Zeitschrift für Praktische Heilkunde*, we are under obligations for numbers

40–52 of his journal for 1857, and numbers 1–26 for 1858.

To DR. BROWN-SÉQUARD we also tender our thanks for favors extended to our journal in Paris.

MONSEL'S SALT.—We have lately received several letters relative to the preparation of this new remedy, and we give the formula as it is found in Monsel's article in the Journal de Pharmacie et de Chimie, September, 1857. We prefer giving the French weights, as we could only approximate them by reducing them to the English standard. Every accomplished druggist, who alone is able to make these articles, should have his box of French weights whenever he enters upon the preparation of an article so important as this.

Distilled water, one hundred grammes;
Sulphuric acid, at 60° [Baumé,] ten grammes.

Carry to ebullition in a porcelain capsule of a demi-litre capacity, and add

Protosulphate of iron, fifty grammes.

After complete solution, add gradually to the boiling liquid,

Nitric acid, at 35° [Baumé,] sixteen grammes.

And when the disengagement of vapors has ceased, add gradually,

Powdered protosulphate of iron, fifty grammes.

Complete the bulk of one hundred grammes by adding distilled water. Let cool and filter.

The salt crystallizes in scales of a brownish-red color, has an astringent taste, and no caustic properties. As a hemostatic and astringent, the soluble persulphate of iron is beginning to have a wide reputation, and when applied to a bleeding surface, it produces a large and firm clot, which increases in hardness for several hours. We have found it useful in cases of nervous and other affections. The preparation can be obtained of Mr. Hubbell, an accomplished pharmaceutist of this city.

NECROLOGICAL NOTICES.

DEATH OF DR. MUTTER.—Within the year which closed with the end of March, 1859, two members of the most successful medical faculty which this country has seen, have passed from the scene of their labors and triumphs to a world where men toil not, nor spin, and where the ambitions of this earth live no longer. Of one of these friends, it scarcely becomes the writer to speak; kind and tender hearts, friends won by long service, and a profession served and elevated by earnest and happily-directed industry, have spoken his eulogy in many ways, and in terms which are deeply felt by those who were most near to him in blood and friendship. Such ties united him to the subject of this memoir, that it is impossible to do otherwise than connect them in thought, now that death, which severed their union, has come with thoughtful charity to reunite them again. Both were Virginians, of a school almost extinct; both were trained to the courtly manners of an elder day; both were alike remarkable for professional skill and for a hospitality as warm as the hearts which prompted it.

The Rev. Frederick Ogilby, of New York, a friend of Dr. Mütter's, as well as of his colleague, has expressed in a few sentiments, and with graceful feeling, the ties which united the two Professors and the points in which they resembled one another. He says:—

> "On opposite corners of Walnut and Eleventh Streets lived two Virginians; not such as Thackeray imagines, but real native-born, actual Virginia gentlemen. They were both physicians, Professors in Jefferson College, both distinguished for the highest attainments in their profession, and both true men, whose hearts and doors were always open. In their lives they were

united, and in their death they are not divided. Only a few short months have intervened between the deaths of Dr. J. K. Mitchell and Dr. Thomas D. Mütter. One familiar with Philadelphia for the last few years must feel how much its society has lost in the death of two such men. It is happy now to think, at least the writer of this rejoices in such a thought over the graves of beloved friends, that to their earthly distinction they added the gifts and qualities of true-hearted Christians."

Dr. Thomas Dent Mütter was born in Eppes Street, Richmond, Virginia, on the 9th of April, 1811. He was descended from Thomas Mütter, a merchant of Glasgow, in Scotland, who emigrated to North Carolina before the Revolution, and became connected by marriage with the family of Moore, two of whose members were distinguished for their gallantry in the battle of King's Mountain and other actions. Mr. John Mütter, the father of the subject of this sketch, removed to Richmond in early life, and was well known in that city as a successful merchant, and not less for the exercise of a hospitality such as was remarkable, even in a State proverbial for its liberal greetings and luxurious ease. How well Dr. Mütter himself sustained the character of his Virginia home, is known to most of us, and will be long remembered by those also who have shared the generous hospitalities of his heart and house.

Dr. Mütter's mother was Miss Gillies, of Alexandria, a half-sister of the late General Walker Armistead, of the United States Army. Through this lady, he was also connected with Gillies, the historian of Greece, and with the well-known families of Carter, Lee, and Dulaney. Professor Mütter had the misfortune to lose both his parents before he attained his ninth year. Thus left alone in the world, he fell to the kind charge of his guardian and kinsman, Colonel Robert Carter, of Sabine Hall, where he spent his boyhood. He received his classical education at Hampden and Sydney College, and afterwards spent a short time at Yale, where he intended to pursue still further his preparatory studies, an intention which was frustrated by an attack of hemorrhage from the lungs, which induced him to give up his plan of temporary residence in a far northern climate. He accordingly removed to Alexandria, where he began to study medicine in the office of Dr. Simms, of that city. His subsequent studies were pursued in the University of Pennsylvania, under the immediate tuition of Dr. Samuel Jackson, still the honored Professor in that institution. Dr. Mütter graduated in 1831, at the early age of twenty years, and in the spring of the same year sailed for Europe, and went to Paris, where he devoted himself to surgical pursuits, and especially to the clinics and lectures of Dupuytren.

After residing in Europe about one year, Dr. Mütter returned to this city, where he began to practice his profession, and to instruct students, with whom he soon became deservedly popular. He was at this time one of the first to initiate the practice of recapitulating, by a series of questions, the lectures to which his pupils had listened during the week. This mode of teaching has since held a recognized place among us, and is certainly of value so long as it does not degenerate into a mere system of verbal drill.

Like most of our best physicians, Dr. Mütter obtained his first independent experience in the Philadelphia Dispensary, and not long after he began to teach, received an appointment in the summer school, founded by Dr. Chapman. Here he displayed the remarkable powers as a teacher which have since become more widely known. Meanwhile, a large and increasing surgical and general practice, combined with his growing fame as a teacher, rendered him a prominent candidate for any vacant chair of surgery or anatomy. The reorganization of the Jefferson Medical College, in 1841, afforded the wished-for opportunity, and in company with his friend, Dr. Mitchell, the subject of this notice entered the ranks of the new faculty. A triumph scarcely anticipated by the most hopeful of those who had entered into this new enterprise awaited its future. To this result the young Professor of Surgery largely contributed; and when the new faculty planned and carried out their system of clinical lectures, Dr. Mütter's skill as a surgical teacher and a dexterous operator still further added to his reputation, and to that of the College. To increase the interest and usefulness of his clinic, no sacrifice was too great—no trouble to be counted. The excellent results of this method of practical teaching, was also aided by the perfect understanding which existed between himself and the Professor of Anatomy, Dr. Pancoast. At every important operation they assisted each other, and frequently brought to the public clinic their private patients.

Dr. Mütter's merits as a teacher of surgery, were of a rare order. We have heard as good clinical lecturers, but we have heard no mere didactic teacher of surgery whose lectures surpassed those of Dr. Mütter in all the essentials of teaching.

From the ample resources of his museum the arena of his lecture theatre was filled with illustrations, casts, morbid specimens, etc. The lecturer used no notes, save a page of his syllabus. His manner was most impressive; few lecturers had better listeners. His small and graceful frame, and the quiet ease of his social chat, scarcely prepared one for the full tones and emphatic manner in which he laid down the principles of his art.

Dr. Mütter's reputation as an operative surgeon, was deservedly high. A monograph upon club-foot, and several papers recording most daring plastic operations for the cure of the deformities resulting from burns, indicate the direction which his surgical reputation took. He had the best qualities of a good operator, and although during later years his declining health indisposed him to attempt severe operations, earlier in his career no case was too formidable. Under an appearance of excessive—almost nervous—anxiety, which was largely due to ill-health, he concealed a real coolness and confidence which no surgical emergency disturbed. Again and again, the writer has seen him suddenly tested by unlooked-for contingencies which, neither in public nor private, exhausted his resources or affected his powers. As a surgical physician, if such a term be allowable, Dr. Mütter was remarkable for the singular skill which he exhibited in the diagnosis of surgical cases. He possessed, most amply, that union of qualities which constitutes surgical tact, while no man was more frank in his prognosis, and, certainly, none more careful and untiring in the after-treatment of those who had undergone the prompt remedy of the knife. The daring which inspired his operative practice, was no less visible in the readiness with which he accepted and made use of the novelties of the day, a peculiarity which did not lessen, as too often happens, with advancing years.

Three years ago, Dr. Mütter's failing health convinced him that he was no longer able to fulfill the duties of his chair, and, although his colleagues were willing to afford him any indulgence, he was indisposed to continue in a position which he could not fill with entire satisfaction to his own sense of right. He, therefore, resigned his office, and was, shortly afterwards, appointed Emeritus Professor of Surgery in the College whose fortunes he had so eminently aided by his labors.

In the ensuing autumn, Dr. Mütter sailed for Europe, in search of health. Before he left this country, he entered into negotiations with the College of Physicians of Philadelphia, intending to give to that learned body his valuable museum, and to endow it with 30,000 dollars, so soon as its Fellows should have succeeded in erecting a suitable building to accommodate the collection. His rapidly failing health, and the delay necessarily attendant upon so important a matter of business, induced Dr. Mütter to postpone the conclusion of his negotiation with the College, and after providing in his will for the ultimate fulfillment of his intentions, he sailed for England.

A protracted residence abroad brought no relief to the malady whose only remedy was to be its own last and fatal attack. Weary with the endless torture of disease, he returned to this city in the autumn of 1858, when he hastened to fulfill his promise to the College of Physicians, as though conscious how little time was left him for the affairs of this world. Upon the signature of the papers necessary to complete his contract with the College, Dr. Mütter left this city again, in search of the health which came no more, and turned his steps toward the South, where he spent the last winter between Savannah and Charleston. In this latter city, his constitutional malady rapidly increased upon him, and on the 16th of March, he finally passed away from the kindness and generous sympathies which his character and social graces had gathered around him in a land of strangers.

This kind and Christian heart, this generous and accomplished physician, has at length found the sad relief which his own art denied him here. Among those to whom he gave that ease from suffering in its manifold varieties, which he sought in vain, there will be many to regret his loss; and in the ranks of the profession which gave him all its honors, his remembrance will be held in regard, not less for the qualities which earned success than for the generous spirit with which he returned to his mother art the riches she had given.

One word more. From boyhood to the day of his death, the subject of this sketch was the victim of hereditary gout, which preyed endlessly upon a frame inconceivably sensitive to pain. In this round of torture there were change and variety of affliction, but of late years, scarce any interval of entire relief. Into the estimate of his labors, and of his character, this element should fully enter.

With this brief record of a weary and burdened, but fruitful life, we take leave of one whose kindly sympathies and ready courtesy will long be missed and mourned in the home of his adoption.

DEATH OF DR. BOLING.—It is with deep regret that we announce the death, after an illness of several years, of Dr. Wm. M. Boling, of Montgomery, Alabama. As a gentleman of high medical attainments and virtue, Dr. Boling had acquired an enviable reputation, and many valuable articles emanating from his pen are to be found in the periodical literature of this country. We sympathize with his numerous friends upon the loss of an honorable man and skillful physician.

Dr. G. M. Newton, late Emeritus Professor of Anatomy in the Medical College of Georgia, died early in January, at Augusta, of tetanus, occasioned by injuries received when thrown from his buggy. Dr. Newton held the chair of Anatomy in the Medical College of Georgia for nearly twenty years, a post in which he soon gained distinction as an able teacher and elegant lecturer.

Dr. Alexander Monro, late Emeritus Professor of Anatomy in the University of Edinburgh.—We regret to have to record the death of this eminent physician, which took place on the 10th inst., at his seat, Craiglockhart House, near Edinburgh. The deceased was the third of his family who, in direct succession, so ably filled the Anatomical Chair in the University of Edinburgh for upwards of a century. He was born November 5th, 1773; was educated at the High School; and studied at the University under the late Professors James Gregory, Cullen, Black, Duncan, etc. After having passed through a full course of medical education, and obtained the degree of M.D., he went to London to prosecute the study of anatomy and surgery under the famous Wilson, and from thence he repaired for a short time to Paris. In 1800 he was appointed conjoint Professor with his father, at whose death, in 1817, he became sole Professor of Anatomy and Surgery, and continued to lecture till 1846, when he resigned the chair. During the long period he delivered lectures his class was well attended. Among his pupils there are not a few who have risen to the highest eminence in medical science. Such names as Professors Alison, Traill, Christison, Syme, Liston, Miller, Edward Forbes, etc., and Drs. Abercrombie, Hope, Holland, Bright, Marshall Hall, and Sir Humphrey Davy, are of world-wide reputation.

Dr. Monro was the author of several anatomical, medical, and surgical treatises, of which the following are the principal: "Elements of Anatomy;" "Morbid Anatomy of the Brain;" "Morbid Anatomy of the Stomach, Gullet, and Intestines;" "Anatomy of the Perinæum;" "Anatomy of Crural Hernia;" etc. etc.

Dr. Monro was twice married: first, in 1800, to the eldest daughter of Dr. Carmichael Smyth, by whom he had six sons (one of whom died in infancy) and six daughters; secondly, in 1836, to a daughter of David Hunter, Esq., of London, who survives him.—*London Lancet*, March 26, 1859.

Bi-Monthly Bibliographical Record.

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THE

NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

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Analytical and Critical Reviews.

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The study of life and its phenomena presupposes the study of living beings—the receptacles or media of life—the instruments or mechanism through which the vital principle is manifested. Reasoning from the known to the unknown, we may, with philosophical propriety, attempt to abstract or isolate this principle, as one factor of a complex problem, and so study it in its physical, chemical, and vital aspects. Practically, however, we must study life in its anatomical relations; in other words, the structure of living beings demands our attention as the inseparable companion of life. The study of function, to be profoundly successful, must always be associated with the examination of structure. The life of an animal or vegetable is manifested by certain active phenomena, which differ as they are exhibited in different parts or organs of that animal or vegetable. These phenomena are in truth the functions of the organs in which they appear; and these organs are peculiar collocations of organic matter through which, under the influence of the vital principle, these functions or life-phenomena are exhibited, and without which the latter could find no expression.

Now anatomy may be studied alone. Its records are written upon the dead body. With biology or physiology it is different. It must be studied in conjunction with anatomy, since through the functions, which are the actions of the organs, our principal knowledge of biology is obtained. The study of anatomy is a preliminary step, though by no means the key to physiology. "In my opinion," very justly says Milne Edwards, in the introduction to his great work now before us, "anatomy and physiology are inseparable parts of one and the same science. Not only are they mutually and necessarily supporting, but they have one object in common, and they should always be associated, therefore, in the mind of every one who, following the example of Aristotle, seeks to understand the *nature of animals.*"

For every living being there is not only a characteristic topographical or regional anatomy, peculiar to the variety of the species to which the creature belongs, but also certain anatomical relations, both specific and generic, by which it is bound to every other being on the surface of the globe, and in virtue of which it is seen to be part of an infinitely diversified idea or plan. So, also, for everything living there is a special or individual physiology—a physiology of the variety of a species, and a comparative or relational physiology, which concerns the species and the genus only. The life-actions of the fish are not identical with those of the reptile, neither is the physiology of these two groups of animals precisely like that of birds or mammals. The herbivora absorb less oxygen, in proportion to the carbonic acid exhaled, than the carnivora. In the ox the process of digestion is more complicated than in the horse.

The law of differentiation, or, in other words, the law of progression, from the heterogeneous or general to the homogeneous or special, is necessarily as applicable to the actions of an organism, whether vegetable or animal, as to its structure. No organism in the whole series of animated nature is isolated; neither are the actions of that organism. Both are interconnected respectively with the forms and actions of all the higher and all the lower individuals of the great organic series.

Among the ancients, the term physiology was synonymous with natural philosophy. With them, a treatise upon the formation of clouds, the precipitation of rain, the absorption of luminous solar rays by the atmosphere, etc. was as much a part of physiology as an essay upon the movements of the heart in animals, or the circulation of the sap in plants. At the present time, however, the term is used in a much more restricted sense. Instead of embracing all nature in its scope, it is now applied, with obvious etymological impropriety, to one part or division only of the great science of nature. Starting systematically, then, we may say that two branches of inquiry claim the attention of the student of nature—First. Physics, (φυσις, *natura*,) or physiology, (φυσις, λογος,) as it ought to be called, the science of nature as a whole. Second. Biology, (βιος, *vita*,) the science of life, or of the so-called animate world. Treviranus* and Foderé were among the first to substitute this latter term for that of physiology. They used it to signify the properties which differentiate organic and inorganic matter. According to Bostock, however, the word "may be considered as applicable rather to the general principles which constitute the theory of the science, than to the descriptive part from which these principles are deduced."† Ducrotay de Blainville employed the words *zoobiology* and *zoobie* indifferently, to express the internal phenomena of the organism in their relation to external conditions.‡ Long before him, however, Darwin applied the term zoonomia to the laws of organic life. Dr. Bennett, in his philosophical *Outlines*, employs the term physiology in the enlarged sense of comprehending the doctrine of life, whether in health or disease, which, he says, would perhaps more properly be denominated biology. Flourens divides physiology into biology, or the study of life proper, and ontology, or the study of living beings. Ontology he divides into neontology and palæontology. Substituting the word biology for physiology, we may designate the physiology of any particular organized body by the term Idiobiology, (ιδιος, βιος,) and the physiology of the species or genus to which that body belongs by the term Biontology, (βιος, οντος.) The standard works on human physiology are so many treatises on Idiobiology. Human Biontology, or the comparative physiology of the races of man, has not yet found an exposition. The nearest approach to it, perhaps, is Boudin's recent valuable and elaborate *Traité de Géographie et de Statistique Médicales, etc.*

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* Biologie, oder Philosophie der lebenden Natur für Naturforscher und Aertze.

† Elementary System of Physiology; London, 1836.

‡ Cours de Physiologie Générale et Comparée; Paris, 1833, tome i p. 3.

The nature of the vital fluid; its circulation throughout the body; the manner in which it is aerated or vivified, so to speak, and enabled to run its fertilizing course; the process by which it receives constant and necessary supplies; the manner in which it gives, on the one hand, pabulum to the tissues, and, on the other, certain recremento-excrementitial matters to the various secerning organs; the mysterious process by which the nutritive material is assimilated; the manner in which animal heat is maintained, —such are some of the subjects which it is the province of Idiobiology to investigate.

Biontology, embracing, as it does, the transcendental or strictly philosophical in physiology, occupies wider, and, if possible, higher ground. It treats of the ovum; its origin and developmental career from the general to the special, or, to use the language of Von Baer, from the homogeneous to the heterogeneous; the laws of formation and deformation; the doctrine of monstrosities, of arrests of development, etc. It investigates the creation and extinction of species and genera, the order of their succession in time, and their distribution in space; their fixity or mutability; the amount of life upon the globe, and the laws governing that amount; the specific and generic differences and relations of existing animals and plants. It goes still further, and inquires into the functional history of the ancient Flora and Fauna, whose fossil remains are the only records of that history. Lastly, it concerns itself with the races of men, and attempts to solve the obscure and perplexing problems of sociology and ethnology—discussing questions of social ethics, of moral and educational interests, and essaying to determine by its own investigations, whether man be one or many, whether the human family be monogenous or polygenous in origin. From this summary, it will be seen that Biontology subdivides itself into the sciences of embryology, organic morphology, teratology, neontology, palæontology and ethnology. To these, psychology or the science of mind has also been added. And here it is that physiology touches upon the domain of the metaphysician and the theologian.

Thus it appears that biology is at once a general and a special science; for the functions, which are simply the actions or phenomena springing from the union of the life-principle and organic structure, separate naturally into three great classes: the nutritive, vegetative, or assimilative, those concerning the individual, and whose great object is to preserve the structural integrity of the organism in a healthy condition; the reproductive, which provides for the preservation of the race, species, or genus, by generating new organisms to take the place of the old, the former exhibiting all the specific peculiarities of the latter; and, finally, superadded to these in the animal, the functions of relation or of animal life, by which the animal is brought into relation with surrounding objects, and by means of which it is protected to a certain extent from destructive influences without.

Such is the classification very correctly adopted by Professor Dalton in his *Treatise on Human Physiology.* This work he divides into three sections. The first is devoted to nutrition, under which head he discusses, successively, the proximate principles, food, digestion, absorption, the bile, formation of sugar in the liver, the spleen, the blood, respiration, animal heat, the circulation, secretion and excretion. All this is embraced in 275 pages. In the second section, which occupies 120 pages, is considered the physiology of the nervous system. This section comprises six chapters, which treat respectively of the general character and functions of the nervous system; of nervous irritability, and its mode of action; of the spinal cord, the brain, the cranial nerves, and the great sympathetic system. Reproduction falls into section third, and takes up 164 pages. This section is divided into eighteen chapters, which are severally devoted to the consideration of the following subjects: The nature of reproduction, and the origin of plants and animals; sexual generation, and the mode of its accomplishment; the egg, and the female organs of generation; the spermatic fluid, and the male organs of generation; periodical ovulation, and the function of menstruation; the corpus luteum of menstruation and pregnancy; the development of the impregnated egg; the umbilical vesicle; the amnion and allantois, and the development of the chick; the development of the egg in the human species, and the formation of the chorion; the development of the uterine mucous membrane, and the formation of the decidua; the placenta; the discharge of the ovum, and involution of the uterus; the development of the nervous system, organs of sense, skeleton, and limbs; development of the alimentary canal and its appendages; development of the kidneys, wolffian bodies, and internal organs of generation; development of the circulatory apparatus; development of the body after birth. From this recapitulation of its contents, and the space devoted to each section, it will be seen that this work is in reality a condensed treatise or essay upon reproduction, accompanied with a very general survey of the physiology of organic and animal life; a survey, it must be said, altogether too purely physiological to meet the daily wants of the practitioner of medicine; though very well adapted, for several reasons presently to be stated, as a primary work, to be placed in the hands of the student who is just commencing his physiological studies.

Professor Bennett's *Outline of Physiological Science* is also divided into three parts. The first treats of histological physiology; the second of normal or healthy physiology, and the third of pathological physiology.

Though much smaller, and still more deficient in details than the work of Professor Dalton, it is certainly more practical in its conception of physiology as a *medical* science; as a science to which the student, and still more the practitioner of medicine, may confidently turn for the applications of those fundamental principles which constitute, in the long run, the only sure guides to success in the treatment of disease, and through which alone is the art of medicine to be advanced to the condition of an exact science.

Ever since the days of Harvey and of Haller, physiology has been making giant strides toward perfection. Nevertheless, strange as it may seem, the profession is still divided in opinion as to its utility and applicability to practical medicine. "When the cure of an order of diseases follows constantly the employment of a medication," says Renouard in his *Histoire de la Médecine*, "we are led to regard this medication as the cause of the cure which follows its use; but it is impossible for us to perceive the physiological reason of this result, and it is consequently useless to seek it. * * * The physiologist must limit himself to the description of the normal phenomena of the living economy—the pathologist to the abnormal ones." Contrast with this passage the subjoined language of another transatlantic author, who had in him the spirit of truth, when he wrote "that in no way is both the science and the art of healing so likely to be improved as by the association in its literature, and through that in the minds of its practitioners, of pathology with physiology rather than with morbid anatomy; that juster theoretical views are elicited by looking upon disease as part of the phenomena of life than as the producer of appearances seen after death; and that patients are more likely to be cured by one, whether original observer or reader, who is considering even imperfectly the vital actions exhibited by them, than if he knew exactly what would be the consequences of the disease in the corpse." And again: "It tends to false views of nature's works, and bad practice in our profession, to suppose physiology and pathology different sciences. It is a fatal error to do or to say anything which can lead to the idea, that in health one set of laws are exhibited by our bodies, and in disease another set; or, what is still worse, that these laws are in opposition the one against the other."* So, also, Bernard writes: "We are not authorized to regard physiology and pathology as two distinct domains, in which occur phenomena essentially different in character."† The same idea is expressed by Professor Bennett in other words. "Vital action, as manifested in the ultimate fibre of a muscle," says he, "may be considered histological, as appertaining to elementary structure; vital action, as exhibited in a group of muscles, for the purposes of speech, deglutition, respiration, locomotion, and so on, may be called physiological, as belonging to the functions of organs; and vital action in muscle, as shown in perversion of those functions during spasm, convulsion, or paralysis, is more properly called pathological. It must be evident, however, that these distinctions are altogether arbitrary, and that the three subjects constitute one study. Thus, our knowledge of muscular action is derived from an acquaintance with its ultimate structure and the contraction of its individual fibres, and from an observation of its diseased conditions. Where health terminates and disease begins, has never yet been settled; nay, more, what is health to one man would be disease in another, just as the degree of strength, which is natural to a delicate frame, would be considered weakness in a strong one. Histology, physiology, and pathology, then, are closely allied, and are only different divisions of the same subject; the facts of one are available for the study of all; and any theory deduced from this branch cannot be correct unless in accordance with the data furnished by the others."

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* Digestion and its Derangements, by T. K. Chambers, M.D.; New York, 1856, pp. 14, 223.

† Leçons de Physiologie Expérimentale; Paris, 1855, t. i. p. 24.

Normal and abnormal processes are, indeed, wonderfully interwoven in the life of man. The organic harmony which we call health contains in itself the seeds of discord. In obedience to an unalterable law of the economy, these seeds sooner or later begin to germinate. Their germination and development are the avenues to death. Rightly considered, health is but a relative term. It not only expresses ease, but implies disease; so that the natural history of disease, which is pathology, is in truth a part of the natural history of ease or health, which is physiology. Whether by diminution or exaltation, pleasure, the sign of health, may be quickly converted into pain, the symbol of disease. As a comprehensive study of pleasure involves the investigation of pain, or as a complete knowledge of perfection necessitates an acquaintance with imperfection, so the laws of health must, to a great extent be elucidated by those of disease. Indeed, if "health is only the beginning of a just consideration of the human being," then are disease and death the end of that consideration; and this end, coming around circularly, touches at innumerable points upon the beginning.

The budding health of the infant, measured by a pulse of 120 beats, and a respiration of 30 movements in the minute, would be disease in the adult. So the health of the adult is not exactly health in the old. Hence, we speak of an infantile, a juvenile, an adult, and a senile physiology; while the pathologist describes for each of these periods a characteristic semeiology. In almost all hearty persons, temporary alterations of structure and function, of too slight a character to attract serious attention, are more or less constantly occurring. Between these slight alterations, and those extensive and persistent changes of structure and function, which are hopelessly fatal, the shades of transition are numerous. Some men are born with organs so well attuned to each other and to surrounding conditions, that they fill up the measure of threescore years and ten without disease, and then, decaying, slip away gently from the scene of their daily hopes and fears, in obedience to the inexorable law which assigns to the human organism a definite time to live. In others, again, and they are the majority, some one organ, from an inherent and hereditary inability to do its work properly, tends to decay sooner than its associates. Thus the sick organ precipitates that dissolution which we all feel must come at last.

All the details of the *ars medendi* tend to the conclusion, that pathology is simply an "erring physiology." Both are essentially processes, and not entities; processes, moreover, in which the various constituent acts or movements pass into and blend with each other so imperceptibly that they cannot be separated. Both may strictly be regarded as the manifestation or objective indication of the existence and activity of the life-principle. Both manifest a remarkable periodicity of action. The study of both has been pursued in accordance with the anatomical method, and with equally unsatisfactory results. The two sciences are, in truth, mutually elucidating parts of one continuous whole. The physiology that ignores pathology, or the pathology that repudiates physiology, is an incomplete and thriftless study, alike without principles and without beneficial results. If the slowly and laboriously accumulated history of medical doctrines teaches us anything, it is, that in the various epochs of that history the ruling pathological idea has been modeled after and based upon the prevalent physiological doctrine of the time. When the iatro-chemists of the seventeenth century maintained "that the operations of the living body are all guided by chemical actions, of which one of the most important and the most universal is fermentation, the states of health and disease were supposed to be ultimately referrible to certain fermentations, which took place in the blood or other fluids."* And so, toward the close of the same century, when the "body was regarded," by the iatro-mathematicians, "simply as a machine composed of a certain system of tubes, calculations were made of their diameter, of the friction of the fluids in passing along them, of the size of the particles and the amount of retardation arising from friction and other mechanical causes; the doctrines of derivation, revulsion, lentor, obstruction, and resolution, with others of an analogous kind, all founded upon mechanical principles, were the almost universal language of both physicians and physiologists." And when, at a later period, the chemists and physicists were succeeded by the vitalists, who ascribed all the healthy operations of the body to a superintending *anima*, or unconscious soul, the physicians stoutly held that upon this necessary and unintelligent agent depended the prevention and repair of injuries and the removal of morbid conditions. The apparently modern, but in reality ancient physiological doctrine of dynamical or vital agency, deeply underlies and gives color to the medical science of the present day.

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* Bostock's History of Medicine.

Physicians are not yet agreed whether the study of normal should precede or succeed the study of abnormal phenomena. And yet this important question must be settled before clinical medicine can attain the status of a science, inasmuch as the fundamental theory of the latter is to be determined by the result of the inquiry. The laws of pathology have not been, and, in all probability, cannot be, generalized from morbid phenomena alone. The rapidity with which groups of phenomena are generalized and reduced to a system is in direct proportion to their simplicity and freedom from perturbing influences. Hence, physical science is older and far more exact than organic science. So human physiology antedates human pathology; the phenomena of the former being simpler, and varying within more narrow limits than those of the latter. Some there are, who, like Coleridge, hold that the laws of disease are to be elucidated wholly from the phenomena of disease. On the other hand, Geoffroy St. Hilaire,[*] Bichat,[†] Ducrotay de Blainville,[‡] Comte,[§] Esquirol,[||] Robin and Verdeil,[¶] Georget,[**] Feuchtersleben,[††] Cullen,[‡‡] Bowman,[§§] Brodie,[||||] Lawrence,[¶¶] Simon,[***] and many others, with a more philosophical conception of the relations of physiology to pathology, consider that the latter should be studied chiefly as a deduction from the former, and not as an inductive science *per se.*

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[*] Hist. des Anomalies de l'Organization; Bruxelles, 1837, t. ii. pp. 9, 10, 127.

[†] Anatomie Génerale; Paris, 1821, t. i. p. 20.

[‡] Physiologie Comparée; Paris, 1833, t. i. p. 20.

[§] Cours de Philosophie Positive; Paris, 1830–1842, t. iii. pp 334, 335.

[||] Des Maladies Mentales; Paris, 1838, t. i. p. 111.

[¶] Traité de Chimie Anatomique; Paris, 1853, t. i. p. 68.

[**] De la Folie; Paris, 1820, pp. 2, 391, 392.

[††] Principles of Medical Psychology, Sydenham Society's edition; London, 1847, p. 200.

[‡‡] First Lines of the Practice of Physic; Brookfield, 1807, vol. i., Preface and Introduction, pp. 23, 24.

[§§] Encyclopedia of the Medical Sciences; London, 1847, p. 824.

[||||] Lectures on Pathology and Surgery; London, 1846, p. 3.

[¶¶] Lectures on Comparative Anatomy, Physiology, Zoology and the Natural History of Man; Bohn's edition, 1848, p. 45.

[***] General Pathology; Philadelphia, 1852, pp. 12, 13.

It is in consequence of entertaining such views of the relations of physiology to pathology, that we have been led to compare together the *Treatise* of Professor Dalton and the *Outlines* of Professor Bennett. Dr. Dalton is the normal or scientific, Dr. Bennett the medical or pathologic physiologist. The former treats his subject as a *pure* science; the latter exhibits it to us as an *applied* science. The object of Dr. Dalton is, as he indeed informs us in his preface, "more particularly to present, at the same time with the conclusions which physiologists have been led to adopt on any particular subject, the experimental basis upon which those conclusions are founded; and he has endeavored, so far as possible, to establish or corroborate them by original investigation, or by a repetition of the labors of others." The leading desire of Dr. Bennett has been, as we also learn from his preface, "to connect physiology with the scientific practice of the medical art." Dr. Dalton, the experimentalist, restricts himself to the field of healthy physiology, intent on verifying its facts and enlarging their number; Dr. Bennett, the practitioner of medicine, takes the established facts of physiology, and endeavors to show us how to use them in elucidating the obscure points of pathology and therapeutics. The *Treatise* of the former finds its proper place among the ordinary physiological text-books of the day; the *Outlines* of the latter may be regarded as the crude and imperfect exponent of a new school—the school of *applied physiology*—a school whose growing importance is acknowledged by all medical thinkers, whose method is peculiar to itself, and whose literature lies scattered in various physiological works, in special monographs on physiology, pathology, and therapeutics, in medical journals, in hospital reports, in treatises on hygiene, in the transactions of biological societies, etc. The *disjecta membra* of this literature are yet to be collected, arranged, and condensed into a scientific system—the true Institutiones Medicinæ. Hopeful attempts at the application of physiology to the explanation and treatment of disease, are to be found in the work of Chambers on *Digestion and its Derangements,* in that of Radcliffe on Epilepsy, that of Brinton on Diseases of the Stomach, and many others which we might mention. The most recent and philosophical effort in this direction is contained in the Lectures of Brown-Séquard, delivered at the Royal College of Surgeons of England, in May, 1858, and published in the *London Lancet* for that year.

A cursory examination of the standard physiological works of the day is sufficient to show that attempts have been made both to investigate and to teach physiology in accordance with systems fundamentally different from each other. Of these various systems only four occupy a prominent place in the history of medicine. These are the Circumstantial or strictly Phenomenal, the Historical or Progressive, the Anatomical or Organic, and the Physiological or purely Functional. The first two are chiefly methods of exposition or education; the last two provide for the gradual development and advancement of the science. To these may be added a fifth, which may be called Clinical Physiology, or Physiology in its application to Clinical Medicine, and which, though yet in its infancy, is destined to supersede all the others in our medical schools.

We proceed to examine them in detail. An opinion has long prevailed that the function of an organ could be readily inferred from its anatomy. This opinion has descended to us stamped with the seal of ancient authority. Galen long ago expressed it in the very title of his work, *De Usu Partium*, which title Lawrence considers to be well chosen. Long anterior to Galen, however, Democritus, of Abdera, who is said to have dissected many animals, investigated the source and passages of the bile with a view to determine the cause of madness. In his *First Anatomical Disquisition on the Circulation of the Blood*, addressed to Riolan, of Paris, in 1649, Harvey assures us that "the dissection of healthy and well-constituted bodies contributes essentially to the advancement of philosophy and sound physiology." In Dr. Ent's "Epistle Dedicatory," prefixed to Harvey's *Anatomical Exercise on the Generation of Animals*, the latter is represented as saying: "No one indeed has ever rightly ascertained the use or function of a part who has not examined its structure, situation, connections by means of vessels, and other accidents, in various animals, and carefully weighed and balanced all that he has seen." In another place, when expounding the method to be pursued in studying generation, he accuses Fabricius of "quitting the evidences of sense that rests on anatomy and seeking refuge in reasonings upon mechanical principles."

Haller, the father (as he has been called) of modern physiology, was so filled with the importance of anatomy to physiology that he deliberately spent thirty years of his life in anatomical pursuits, preparatory to the composition of his justly celebrated *Elementa Physiologiæ Corporis Humani.* In that work he calls physiology *anatomia animata;* and he advises us concerning it in these explicit words: "Et primum, cognoscenda est fabrica corporis humani, cujus penè infinitæ partes sunt. Qui physiologiam ab anatome avellere studuerunt, ii certè mihi videntur, cum mathematicis posse comparari qui machinæ alicujus vires et functiones calculo exprimere suscipiunt, cujus neque rotas cognitas habent, neque tympana, neque mensuras, neque materium." It was not, however, to special or descriptive, so much as to comparative anatomy, that Haller attached such weight. While he strongly recommends that the figure, size, and situation of the organs should be studied in the human body, he also observes that we must become acquainted with these points in the bodies of various animals if we would acquire a thorough knowledge of the uses and actions of the organs.* Thus he dissected the liver in man, quadrupeds, birds, fishes, and reptiles, and noticed that this organ in some animals was not associated with a gall-bladder. He next observed that every animal possessing a gall-bladder was also supplied with a liver. These facts taught him to regard the former organ as a mere appendage of the latter, and not as the true secernent of the bilious fluid found in both these parts. Thus he concluded that the function or use of the liver was to secrete the bile employed in digestion; and in this conclusion he was confirmed by discovering, furthermore, a channel of communication between the liver and gall-bladder by which fluid secreted in the former could readily find its way into the hollow reservoir of the latter. In like manner comparative anatomy teaches us that the essential or fundamental part of the acoustic apparatus is the vestibule—a sac upon which the auditory nerve is distributed. In the cephalopod and gasteropod mollusks, and in crustacea, this sac constitutes the entire organ of hearing. As we ascend through the animal series to man, the semicircular canals, the cochlea, the tympanum and its contents are successively added in accordance with the increased perceptive powers of the animals.

Despite the labors of Daubenton, Camper, Pallas, Harvey, Haller, Hunter, Blumenbach, Cuvier, and others, however, the capability of anatomy to unravel the complex phenomena of life has, at length, in our own day, come to be seriously questioned. Its manifest inability to answer satisfactorily the numerous and difficult questions of the physiologist has led the latter to seek for the explanation of these questions in another channel. We allude to vivisection, an important branch of experimental physiology. The celebrated Magendie, recently (1855) summoned by death from the field of his zealous pursuits, may be regarded as having fairly inaugurated this method of investigation. With him, however, it was at first an anomalous art, which the world, misunderstanding its object, regarded as more cruel than useful, more curious and puzzling than certain and instructive. In the hands of Claude Bernard, Brown-Séquard, and others of the French school; of Bidder and Schmidt, of the Derpt laboratory in Germany; and of Matteucci, in Italy,—it is slowly and surely assuming the character of a science. Half a century ago, Le

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* In the Preface to his *Elements*, he says: "Quotidie experior, de plerarumque partium corporis animati functione non posse sincerum judicium ferri, nisi ejusdem partis fabrica et in homine, et in variis quadrupedibus, et in avibus, et in piscibus, sæpe etiam et in insectis inotuerit."

Gallois, in the Introduction to his *Experiments on the Principle of Life*, deemed it necessary "to exculpate the physiologists who make experiments upon living animals, from the reproaches of cruelty so frequently uttered against them." In England and our own country it is still thought necessary to apologize for the practice of vivisection.

Bernard considers anatomy as the *point d'arrivée* rather than the *point de départ* of physiological research. He reminds us of the ignorance of Sylvius, Varolius, and others, concerning the functions of the brain, notwithstanding their very minute and careful dissections of that organ. Meckel dissected the fifth pair of nerves, discovered its ganglia, and described its anastomoses without suspecting its functions. Microscopic anatomy appears in this respect to be nearly as deficient in results as both descriptive and comparative anatomy. By means of the compound microscope the human fabric has been unraveled, so to speak, and reduced to its ultimate constituents, the simple fibre and the organic cell, and yet, notwithstanding the searching structural analysis to which that fabric has been subjected, but little light has been cast upon the phenomena of living organized matter. "We have the most perfect anatomical knowledge of the spleen, thymus, and thyroid glands; but their offices in the animal economy are wholly unknown." Nearly forty years have elapsed since these words were pronounced by Lawrence before the Royal College of Surgeons.* During this time the accurate microscopic investigations of Müller, Giesker, Schwager-Bardeleben, Wagener, Panagiotides, Ecker, Lucæ, Haugsted, Rokitansky, Kölliker, R. Wagner, Landis, Gerlach, Sanders, Funke, Cooper, Simon, Gray, and others, have made us thoroughly acquainted with the minute structure of these organs. Nevertheless, in the spring of 1855, we find Bernard addressing his class in the following language: "Ne connaît-on pas aujourd'hui très-exactement l'anatomie microscopique de la rate, du corps thyroïde, des capsules surrenales? Connaît-on pour cela leurs fonctions? Non, et on ne les saura jamais que par l'expérimentation." In fact, anatomy acquaints us with the size, form, and structure of an organ. It thus prepares us for the study of the function of that organ; but does not, nor can it, of itself, reveal the function. To attain this a higher and more powerful instrument of research is necessary. The organ must be examined while acting, while performing its allotted part. The liver secreting bile or carrying on its glycogenic function, or manufacturing hepatine, if Pavy be correct, is a very different organ from the cadaveric liver bereft of that power.

The anatomical method starts with the following proposition: Given an organ, to determine its function. Such a proposition presupposes that the function is entirely located in a certain part. This, however, is not so. The functions are not objects tangible and well defined; neither are they isolated acts. They constitute rather a connected series of events, never constant, but ever fluctuating under the influence of objective as well as subjective conditions, like the ebb and flow of the unresting ocean. "We should always," says Beraud, "figure to ourselves the different acts embraced in the domain of physiology as dependent upon each other, occurring *simultaneously* and not *successively.*" So close is the connection between these acts that any derangement of one is sooner or later accompanied with disturbance of the others; while in its turn each one is dependent for its regularity on all the others. The anatomist may dissect out and study separately each of the organs; but the physiologist cannot so isolate and examine the functions. A segregated function is an impossibility. Life is the sum-total of the functions; and this sum-total is a unit which cannot be decomposed and analyzed by the physiologist, as the chemist decomposes and analyzes a mineral. Any decided attempt at such decomposition necessarily involves the destruction of the analyte or subject to be analyzed. We may study most minutely the heart, or the lungs, or the digestive canal, on the dead subject, and be but little the wiser as to their functions. To acquire a knowledge of the latter we must patiently and laboriously watch the play of the former in the living subject. "An organ does not live by itself," very justly writes Bernard. * * * * "Only the organism, as a whole, lives and acts. If we study separately and in succession all the parts of any mechanism whatever, we can obtain no idea of its action. So in pursuing physiology anatomically, we may take the organism to pieces, but we cannot on that account grasp the idea of it as a whole. This idea becomes visible only when the organs are in motion." Although comparative anatomy, in the hands of a Haller, might furnish us with some idea of the secretory function of the liver, yet it is very evident that neither the descriptive, comparative, nor microscopic anatomy of the day could determine that this same liver was also a sugar-elaborating apparatus. Bernard expressly assures us that this important discovery, for which we are indebted to him, was accidentally made during an attempt to study a certain organic phenomenon—the transmutation of sugar in the animal economy—independently of all anatomical aids.

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* Lectures, etc. p. 44.

Why is it that anatomy has so signally failed to elucidate the problems of physiology?

From long observation, assisted occasionally by experiment, we learn to regard the forms and properties of bodies as the natural accompaniments of each other. A certain form becomes for us the symbol or measure of certain properties. Moreover, we learn to anticipate a change of properties as the necessary result of a change of form. Now, between the forms and properties of bodies, both organic and inorganic, there is undoubtedly a constant and determined relation. The exact nature of this relation,—whether it be one of cause and effect, which, notwithstanding the affirmative decision of Reil, Valentin, and other bold thinkers of Germany, there is strong reason to doubt, or one of simple association brought about by the action of the formative principle displaying itself through different media,—it is unnecessary to discuss in this place. We have been at some pains to collect and tabulate in another place* the facts bearing upon this question as it applies to the inorganic world.

The human mind, ever attempting to explain the unknown by the known, unconsciously judges of the properties of a body presented to it for the first time, by the knowledge which it possesses of the qualities of another body of analogous form and composition. The opinion arrived at is subsequently corrected by additional observation and experiment. The hasty and injudicious application of this analogical principle or method to the sciences of anatomy and physiology has given rise to much confusion. Reasoning applicable to the physical and chemical phenomena of the inorganic world has been applied without correction to the organic, and error has been the result. The early anatomists, as is well known, named various parts of the body in consequence of their real or fancied resemblance to objects with which they were familiar. Misled in part by these form-resemblances, which are in most cases simple coincidences, and overlooking the fact that the objects compared are not strictly analogous, but merely similar in one respect, physiologists have been led into a fundamental error by attempting to deduce the functions of certain organs from the uses or actions of bodies to which these organs bore some outward resemblance. Forgetting, moreover, that analogy is not homology, they have even attempted, from these vague resemblances, to argue not only similarity, but even identity of action. We are told, for example, that from their form we judge the stomach and urinary bladder to be reservoirs; the blood-vessels, canals for the conveyance of fluids; the bones, levers, etc. At first sight there is some show of truth in this procedure. When we attempt, however, to determine the true nature of muscles and nerves, in the same way, the fallacious character of the method becomes very apparent in our utter want of success. The organs first mentioned play a more or less mechanical part in the body, and the idea of their uses has been deduced not so much from their form alone as from the resemblance of this form to certain mechanical implements employed in the arts, etc. The failure to divine the functions of muscles and nerves is clearly due to the fact that these resemble in form and structure nothing with which we are acquainted. Herein, then, lies the explanation of the inherent difficulty of the anatomical method of investigating physiology. Even among inorganic bodies which are characterized by such a remarkable constancy of form and simplicity and homogeneity of constitution, the relations of form to composition and properties are as yet entirely too indefinite to be made the basis of any accurate method of study. Still more is this the case with the organic world, whose objects are so complex in structure and so variable in form and functions. From the simple animal cell, man, the head and front of the creation, is developed; in the simple vegetable cell the goodly oak takes its origin. Neither the most skillful chemist nor the most expert microscopist can point out any essential difference between these two cells. Physically and chemically they seem alike. Yet reason tells us that there is some difference, inappreciable though it may be. So long, therefore, as we are called upon to witness such different physiological results flowing from differences—whether of form, structure, or composition—so slight as to be beyond detection and demonstration, so long will we be prevented from using anatomical forms as the indications of functions. From identity of properties or functions in different bodies, we may justly argue homology of ultimate form and composition, and from similarity of properties we may argue analogy of form. But as our physical and chemical appliances, in most instances, prevent us from seizing ultimate and truly primitive forms, we cannot so surely arrive at a knowledge of functions from an acquaintance with forms. The science of morphology, both organic and inorganic, must be far more advanced than it is at present.

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* Journal of the Academy of Natural Sciences of Philadelphia, vol. iii. part ii.

We have every reason to suppose that dead tissue differs molecularly from living tissue, even though we be not able to demonstrate this difference. The functions of which the physiologist treats are the properties, so to speak, of the living and not the dead tissues. Bernard has happily seized and forcibly dwelt upon this idea. "In physiology," says he, "the vital properties of living matter should be verified upon the living tissues; on no account should they be deduced from the conformation of the dead body."

In the *Introduction* to Professor Dalton's work, we find the following language, which is in general accordance with the foregoing views:—

> "There is only one means by which physiology can be studied; that is, the observation of nature. Its phenomena cannot be reasoned out by themselves, nor inferred, by logical sequence, from any original principles, nor from any other set of phenomena whatever." We cannot "infer the truths of physiology from those of anatomy, nor the truths of one part of physiology from those of another part; but all must be ascertained directly and separately by observa-

tion. For although one department of natural science is almost always a necessary preliminary to the study of another, yet the facts of the latter *can never be in the least degree inferred from those of the former, but must be studied by themselves.*"

The physiological or functional method of investigating physiology proposes to start with the particular organic action or phenomenon to be studied, and by observation and experiment to track it through all its modifications and transmutations in the economy, until we are able to localize it anatomically. Instead of starting with the organ and terminating with the function, attention is first directed to the function, and last of all to its anatomical seat or centre. Following this method, the physiologist attempts to study the living being exactly as he finds him surrounded by constantly varying circumstances, and exposed to climatic conditions, which are, in truth, the external conditions of vitality. The reciprocal actions incessantly going on between these circumstances and conditions on the one hand, and the phenomena of the living organism on the other, constitute a deeply interesting chapter in physiological science, and one wholly beyond the capabilities of anatomy to explain. Bernard is the most determined representative of this method. He thinks, in fact, that experiment upon the living body ought to take the lead in all our studies of life-phenomena, and that the true value of anatomy lies in the *a posteriori* explanation of the phenomena discovered by physiological experimentation—a knowledge of the structure, form, and relations of organs, enabling us to account for functional peculiarities rather than for the function itself.

It will thus be seen that the experimental method so strongly advocated by Magendie, Bernard, and others, investigates and teaches simultaneously. Explorations and discoveries in new and untrodden fields are carried on before the student, who is himself stimulated to become an investigator by thus learning the manner in which physiology advances to new triumphs. One of the chief defects of this method, however, lies in its incompleteness as a means of instruction; facts and doctrines which are old and well established not being dwelt upon at all, or only incidentally. Novel questions claim profound attention, and the interests of the science are cared for at the expense of the wants of the student. In the College of France, to which Bernard is attached, attempts are constantly made, through new investigations and discoveries, to fill up the scientific lacunæ overlooked in a more systematic course. To use the language of Bernard himself, employed at the opening of the *cours du semestre d'hiver*, 1854–55, "in preference to established questions, the most difficult and obscure problems are attacked in the presence of an audience already, by their previous studies, prepared for discussion." With the *Faculté de*

Médecine, on the contrary, the system of exposition is at once dogmatic and synthetical; undisputed facts are presented to the exclusion of others, and by the use of theories and hypotheses, oftentimes more ingenious than ingenuous, the science is made to assume the appearance of a unit instead of the fragmentary and incomplete study, which it really is. The faculty professor is the descriptive geographer, who tells us of lands explored and known; the experimental biologist is the bold navigator, who forsakes the beaten waters, and turns the prow of his ship toward new and strange lands, ever ready to alter his course as circumstances may arise requiring it. The experimentalist teaches by example, the faculty professor by authority. The one investigates, the other narrates. The one relies upon the knife and the retort, the other upon records and history. As a conquering army marching through a hostile country attacks and overcomes town after town, so the experimental physiologist discovers and elucidates the various acts or functions of the organic body, abandoning each in turn, as soon as he has mastered its details, and pushing on to new conquests. And as the historian, in after times, comes to write out in detail, and comment upon the acts of the victorious army, so the faculty professor, from time to time, records the new discoveries of the vivisector, criticises and compares them with the old, and assigns them a value and a place in the great standard volume of physiology, which is rapidly attaining such unwieldy proportions. Another defect of the experimental method, which must not be overlooked, is the extreme difficulty of applying it successfully to the elucidation of many of the phenomena which we witness in living beings. Experimental biology differs in several important particulars from experimental physics and chemistry. The physicist and the experimental chemist have it in their power greatly to simplify their investigations, by withdrawing the problem to be solved, or the body to be examined, from all disturbing conditions which might in any manner conflict with the truthfulness of the results obtained. In other words, they can conditionate their analyses, and prescribe limits to their problems, without in the least affecting the essential nature of either of these. Not so, however, the biologist; any attempt on his part at such isolation alters at once the fundamental character of the phenomenon or function to be studied. Each and every organic act must be investigated just as we find it in nature, encumbered with a greater or less number of associated elements, inasmuch as the elements are the essential and modifying accompaniments of the phenomenon. In fact, the latter is what it is on account of the former. The functions of the living organism act and react upon each other without let and without stay. In experimenting upon the higher animals, the most skillful vivisector is very apt to disturb the function which he desires to study. The influence of this function upon the others is impaired, and the latter, in their turn, react upon the former in an irregular and unaccustomed manner. Thus arises a series of perturbations in the economy, which it is difficult to eliminate or make allowance for, and which, if not eliminated, seriously obscures and embarrasses the whole investigation. As much care is required, therefore, in the preliminary institution of an experiment as in its subsequent execution. Hence, the wary philosopher, who comes after the experimental pioneer, to obtain and use his facts for the lofty purposes of generalization, always anxiously inquires how the experiment was performed, and what were its attendant circumstances. Without this necessary information, "science is justified," as De Blainville long ago said, "in refusing to admit the experiment, especially if its results contradict those already established by analogy." Against vivisection may also be urged the impossibility of performing upon man many of the experiments to which the lower animals have been subjected; and the consequent liability to error, which must always, in a greater or less degree, accompany any attempt at explaining the healthy functions of one species or genus of animals, by the results of experiments performed upon those of another species or genus. However, of the hygienic, therapeutic, and vivisectal *modes d'experimentation*—employed separately and in equally skillful hands—the last is undoubtedly the most productive of extensive and important results. Its value is inversely as the difficulty of execution, and directly as the simplicity and independence of the function and the fewness of its associated elements.

The methods of teaching physiology next claim our attention.

The lecturer who follows the circumstantial method, after some preliminary remarks upon the character and objects of his science, the difference between organic and inorganic bodies, the nature and origin of organized matter, the chemical and structural composition of the human body, and its vital and physical properties, proceeds to take up the various functions seriatim, and to narrate, in a certain arbitrary or conventional manner, the numerous facts which, from time to time, have been placed upon record by different observers and experimenters. Of these observers and experimenters little or nothing is said, nor is allusion often made to the objects for which these labors were undertaken, or the animus which guided their performance. But oftentimes the value of a series of experiments and observations is to be determined partly by a knowledge of the objects for, and the manner in, which they were performed, and partly by the manual dexterity and theoretical bias of the performer. It is in consequence of a neglect of these points that so many "false facts," or errors in the disguise of truth, have crept into the temple of our science, only to mystify and perplex those who serve at its altars. Taught in accordance with the method under consideration, physiology is divested of all real philosophy, and presented to the student as a series of isolated facts, more or less true,—a lifeless and motionless tableau, as it were, of details, rather than of principles. Like the positive philosophy of August Comte, it is strictly phenomenal; and like that philosophy, it is also more positive than philosophical, since it ignores the great principle of causation as displayed in the laws of formation and development, and in the fundamental dogma or truth of physiology—the functional unity of organisms in time and space. The circumstantial method endeavors to give a thorough and settled view of the science, by skillfully dwelling upon its well-established points, and passing by in silence, or with a few dogmatic and oracular words, the numerous questions still mooted and unsettled. In this manner the science is made to assume an appearance of maturity and completeness more specious than real. The student is thus deceived and led astray at the very threshold of his studies, so that when he comes to make some practical application of his physiological knowledge, being without principles, it fails him in the hour of his greatest need, turning like fairy money into leaves and dust. With the industrious lover of truth, earnest investigation speedily follows this unlooked-for result, and very soon the student tears aside the veil and exposes the boasted science in all its naked uncertainty. Before him, in a sandy waste of doubt and perplexity, a few green and fertile oases appear, and he is ready to exclaim that our knowledge of physiology, to use the language of Bassanio in the play, is "as two grains of wheat hid in two bushels of chaff; you shall seek all day ere you find them; and, when you have them, they are not worth the search."*

It is contended, we are well aware, that the student during his collegiate career is in the position of a receiver and storer up of knowledge, and not an examiner, and that it is his duty to learn and remember as many of the undoubted facts of physiology as he can. Mental digestion and criticism of these are to come afterwards at his leisure. This we are inclined to consider as radically wrong. It appears to us as improper to crowd suddenly upon the brain a mass of information, as it is to fill the stomach at once with a superabundance of food. In the one case a mental apoplexy, and in the other a fit of indigestion are the results. The student should rather be taught to think and digest as he goes along. He should be made acquainted with the doubtful and disputed as well as the established. It is important for the traveler to know the dangers as well as the beauties of the road he is to traverse. Forewarned, he may escape the one, while enjoying the other. In like manner, the really judicious father, in counseling his son, points out to him the evil that is in the world as well as the good. So the teacher of physiology should take good care to demonstrate all the deficiencies and shortcomings of his science as well as its great and undeniable facts and principles, that the student may thus acquire a truthful idea of the value of the science, and know exactly what dependence may be placed upon it in the performance of his duties as a practical physician. Ere he essays the battle, the warrior looks well to his trusty sword; he examines its handle, the weight and elasticity of its blade, the sharpness of its point, the keenness of its edge, and the like. He notes well its weak points, and estimates its capabilities for the fight. Physiology is the sword with which the physician encounters disease. Its true value lies in the knowledge which the practitioner has acquired of its nature and its powers. Lacking this knowledge, it is but a useless weapon of glass within his hand.

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* Merchant of Venice, Act I. Scene 1.

By the historical method, physiology is treated as a living and progressive spectacle, instead of a motionless and meaningless tableau. The knowledge which we possess, at the present day, of each of the various functional acts of the economy, is presented to the student in the chronological order,—the order, in fact, in which the various discoveries appertaining to it were made. The student is thus enabled to traverse the whole ground for himself, step by step, and to observe how truth after truth was established, and how one great result sooner or later led to another. This is the method adopted by Milne Edwards, in his valuable course of lectures on "Physiology and the Comparative Anatomy of Man and Animals," delivered *à la Faculté des Sciences de Paris*, and now in course of publication. In the first volume, he says: "In beholding the manner in which the science is constituted, and has grown little by little, we the better seize its spirit and its method; we become acquainted with the men as well as with the things, and we are inspired with a just respect for the labors of the investigators of nature, even while the fruits of their labor have not yet become apparent; for in this study we recognize many examples of facts, which, after remaining for a long time barren and neglected, have suddenly become the germ of a great discovery, when the moment arrived to comprehend their bearing, and a man of genius appeared to attach to them his seal." A moment's reflection will show that to present the facts of physiology in their chronological order, is also, in great part, to present them in the logical order. For the acquired facts of one period in the march of science are very frequently the natural and essential precursors of those which appear at a later epoch; so that the order in which the facts of physiology were discovered often expresses truly their natural relation.

The progressive or historical method is undoubtedly the best calculated to instruct the student, and give him a comprehensive and profound view of physiological science. Nevertheless, it cannot, at present, be thoroughly adopted in our schools. Want of time alone forbids its introduction. Edwards, its great advocate, who carries it more extensively into practice than any other physiologist, occupies the first volume of his published lectures, a royal octavo of 535 pages, with the consideration of the blood and respiration alone. The latter is commenced in the first volume, and continued throughout the whole of the second, which contains 655 pages. The third volume, comprised in 614 pages, is devoted entirely to the circulation and the circulatory apparatus. But Edwards assures us that the number of lectures composing the six months' course on physiology and comparative anatomy does not permit him to enlarge equally upon the history of all the functions.

In Europe, where medicine is divided into a greater number of branches, which are taught as specialties, in a more elaborate manner, and perhaps in a more philosophical, though less practical spirit than in our own country, and where a chair is especially devoted to the exposition of pathology, both the historical and experimental methods may be and are pursued with greater advantage to the student, who, if he be diligent and make the best use of his time and opportunities, cannot fail to go forth well prepared for the active duties of his profession. In our own country, where medical science is taught from seven chairs only, instead of ten or a dozen, as the exigencies of the times and the science will sooner or later demand, and where etiology, pathology, hygiene, and therapeutics, under the comprehensive title of the Theory and Practice of Medicine, are taught in about one hundred lectures, by one professor, assisted in a desultory or incidental manner by the other professors, especially those of physiology and materia medica,—neither of these systems of teaching is applicable. Some Bernard might occupy one course with a valuable series of experimental lectures on a particular point connected with the digestive functions; and in the next course he might in the same way direct attention to some other topic. Those students who graduated at the end of this, their second course, might be well grounded in the physiology of digestion, but would know literally nothing of the rest of the science, and especially would this be the case, if the lecturer, as is the custom with us, were to repeat the same course year after year. Obviously this method is not adapted to the genius of our system of medical teaching, if, indeed, we can ascribe genius to a system so cramped in time, and, therefore, in many instances, so uncertain in results. In our schools, the teacher of experimental physiology would be forced to one of two courses: either he must teach a very few subjects thoroughly, to the utter neglect of all others, or he must teach a great deal in a very hurried and inexact manner. We need scarcely say that hurried experiments, in connection with vital phenomena, are worse than no experiments at all. Every one knows that in a decidedly experimental lecture, the hour is pretty evenly divided between the enunciation of the facts, or principles, and their demonstration, which is but a practical repetition of these facts, undertaken with the view as much to enforce their remembrance as to prove their accuracy. Hence it is, that experiments occasionally performed to illustrate some particular topic are often worse than useless, in consequence of their inefficiency. Moreover, in the hands of men less expert, less enthusiastic, and less philosophical than Bernard, they are apt to degenerate into a species of scientific jugglery, whose chief object appears to be to attract and amuse, rather than to instruct a class. These remarks do not apply to chemical lectures, nor to the physiological laboratory. The experiments illustrating a chemical course are, for the most part, simple and easy of execution, and really useful in assisting the student to remember some, at least, of the numerous details which constitute the science. But with physiology the experiments are too complex, and require too much time to be undertaken anywhere with success, but in the laboratory.

The first three chapters of Dr. Dalton's work are devoted to the consideration of the proximate, or, as Chevreul called them, the immediate principles. Following Robin and Verdeil, Dr. Dalton divides these principles into three groups, viz. : 1st. Inorganic substances; 2d. Cystallizable substances of organic origin; 3d. Organic substances proper. Under the first head he treats briefly of water, chlorides of sodium and potassium, carbonates of lime, soda, and potassa, and phosphates of lime, magnesia, soda, and potassa. It will thus be seen that not more than one-half of the principles belonging to this group are here noticed by our author. He very justly defines a proximate principle to be "any substance, whether simple or compound, chemically speaking, which exists under its own form, in the animal solid or fluid, and which can be extracted by means which do not alter or destroy its chemical properties." The thoughtful student might ask why the term simple was introduced into this definition, seeing that no examples of simple proximate principles are alluded to. And if he followed the inquiry up, and discovered that oxygen, nitrogen, and carbonic acid, existing as they do "under their own form" in the blood, are fairly entitled to be regarded as proximate principles,—the two former of the simple class,—he would naturally and justly take exception to the statement made by Dr. Dalton, that all the proximate principles of the first or inorganic group are crystallizable. Hydrogen, carburetted and sulphuretted hydrogen, are also ranked among the immediate principles by Robin and Verdeil. But these substances not being found in any of the tissues or fluids, but only in the air-passages and alimentary canal, they cannot be considered as compositional. Under the head of proximate principles of the second class, sugar, starch, and fats are discussed in a clear and instructive manner. The proximate principles of the third class are described correctly, but with great brevity. The description of these substances, together with some remarks upon their origin and destruction; upon the general characters, chemical constitution, and hygroscopic properties of organic substances; and upon coagulation, catalysis, fermentation, and putrefaction, are all condensed into the short space of ten pages.

Dr. Bennett is still more brief in his treatment of these compositional principles. He divides them into four groups—the albuminous, fatty, pigmentary, and mineral—and presents them to the student in the most meagre and unsatisfactory outline.

In chapter five, Dr. Dalton exhibits to us a "bill of fare," which, although very substantial, is not altogether unexceptionable on the score of variety. He describes very accurately the composition and nutritive value of cow's milk, wheat flour, dried oatmeal, eggs, and meat, but says never a word about tea, coffee, or any other of the accessory or auxiliary aliments. The interesting and really valuable labors of Böcker, Falck, Bischoff, Boussingault, Moleschott, Masing, J. Lehmann and many others, are thus passed over in complete silence And yet a familiar acquaintance with the results of these labors is essential to both the student and the physician—the two classes for whom the book before us was written. Without this knowledge the student cannot hope to obtain a thorough and comprehensive view of the great act of nutrition, involving as this act does that of disintegration or disassimilation, as well as of assimilation. Nor can the physician prescribe intelligently, that is to say, physiologically, for the dietetic management of the sick, without such information. In common with the best physiological authorities of the day, Dr. Dalton very properly objects to Liebig's division of aliments into combustible or heat-producing and nutritious or plastic. At the close of this chapter he comments very judiciously upon the nutritive value of different substances, the total quantity of food required by the adult, and the preparation of food by cooking.

In his observations upon aliment, Dr. Bennett reproduces chiefly the generalizations of Liebig relative to the chemical principles which enter into the constitution of the living being to be nourished; the mode in which these are combined to form tissues and organs; and the influence of the atmosphere and of bodily and mental exercise in determining the kind and quantity of food to be consumed.

Chapter six of Dr. Dalton's work treats of digestion—a function whose elucidation has severely exercised the experimental ingenuity of many eminent physiologists. The literature of this function is so extensive, the observations and experiments relating to it so numerous, varied, and conflicting, and the well-established points so few, that we have always approached the discussion of this subject, in our annual course of lectures on physiology, with not a little hesitation. It is, indeed, no easy task to condense the facts concerning digestion into a summary at once thorough, concise, accurate and reliable. Yet this, we are pleased to find, has been, to a very considerable extent, accomplished by Dr. Dalton.

The various changes which the food undergoes when brought in contact with the saliva, gastric juice, bile, pancreatic fluid, etc. are all detailed in a very satisfactory manner. In estimating the total quantity of saliva secreted in twenty-four hours, Dr. Dalton does not place much reliance upon the quantity formed during the intervals of mastication, but prefers to ascertain how much is really secreted during a meal over and above that which is produced at other times. He has found, by experiments performed for the purpose, "that wheaten bread gains during complete mastication fifty-five per cent. of its weight of saliva; and that fresh-cooked meat gains, under the same circumstances, forty-eight per cent. of its weight. He estimates that the daily allowance of these two substances, for a man in full health, is nineteen ounces of bread and sixteen ounces of meat. The quantity of saliva, then, required for the mastication of these two substances is, for the bread 4572 grains, and for the meat 3360 grains. If we now calculate the quantity secreted between meals as continuing for twenty-two hours at 556 grains per hour, we have:—

Saliva required for mastication of bread . . .	4572 grains;
Saliva required for mastication of meat . .	3360 "
Saliva secreted in intervals of meals . . .	12,232 "
Total quantity in twenty-four hours . .	20,164 grains;

or rather less than three pounds avoirdupois."

The true function of the saliva, according to Dr. Dalton, is a purely physical one. Its action, he maintains, is simply to moisten the food and facilitate its mastication, as well as to lubricate the triturated mass, and assist its passage down the œsophagus. Though he acknowledges that saliva is capable of converting starch into sugar, yet he denies that this takes place in the human economy. In his remarks upon the gastric juice, our author appears to favor the idea of Lehmann, Bernard, and others, that the acid of the gastric juice is the lactic, and not the hydrochloric, as maintained by Prout, Braconnot, Dunglison, Bidder, Schmidt, and others. From the subject of intestinal digestion, which is ably treated, Dr. Dalton passes very abruptly to that of absortion, without deigning to notice the process of fœcification or the act of defecation.

In chapter seven, the process of absorption is described in a brief, but very accurate and lucid manner. No account is given of the agents which propel the chyle and lymph onward in their respective vessels. Cutaneous absorption is not noticed, although in a physiologico-medical point of view highly interesting and important.

In chapter eight the bile is considered. Most of the facts contained in this chapter were originally contributed by our author to the *American Journal of Medical Sciences* for October, 1857, in an essay "On the Constitution and Physiology of the Bile." From his numerous and careful experiments, he arrives at the following conclusions: That the crystalline and resinous biliary matters are not the same in different species of animals, though they resemble each other in most of their chemical properties, and act in the same way with Pettenkofer's test, whether one or both of them be present; that in different kinds of bile they are to be distinguished from each other principally by their reaction with the salts of lead; that in human bile there is no crystallizable biliary substance, but only a resinous one; that Pettenkofer's test is the only available one for the biliary substances proper; that the bile in carnivorous animals passes into the intestine for at least twelve days after the last meal; that it is discharged into the intestine most abundantly immediately after feeding; during the remainder of the twenty-four hours its flow is about uniform, (sixteen grains of biliary matters per hour in a medium-sized dog,) except from about the eighteenth to the twenty-first hour, during which time it is much less; that when bile comes in contact with the gastric fluids, the organic matters of the latter are precipitated; but the biliary substances remain in solution; that these substances disappear during their passage through the intestine, so that they can no longer be recognized by Pettenkofer's test; and that they are, in all probability, reabsorbed into the blood; but if so, they first undergo in the intestine such changes, that they no longer give Pettenkofer's reaction with sugar and sulphuric acid.

The formation of sugar in the liver constitutes the subject-matter of chapter ninth. The glycogenic function of the liver, as is well known, was discovered and announced by Bernard in 1848. Dr. Dalton having repeated the experiments of this eminent physiologist, and satisfied himself of their correctness, strongly advocates his views. He says:—

> "If a carnivorous animal, as, for example, a dog or a cat, be fed for several days exclusively upon meat, and then killed, the liver alone of all the internal organs is found to contain sugar among its other ingredients. * * * The tissues of the spleen, the kidneys, the lungs, the muscles, etc. give no indication of sugar. Every other organ in the body may be entirely destitute of sugar, but the liver always contains it in considerable quantity, provided the animal be

healthy. Even the blood of the portal vein contains no saccharine element, and yet the tissue of the organ supplied by it shows an abundance of saccharine ingredients. * * * The sugar which is found in the liver after death is a normal ingredient of the hepatic tissue. It is not formed in other parts of the body, nor absorbed from the intestinal canal, but takes its origin in the liver itself; it is produced, as a new formation, by a secreting process in the tissue of the organ. * * * The formation of sugar in the liver is, therefore, a function composed of two distinct and successive processes, viz.: first, the formation in the hepatic tissue, of a glycogenic matter, having some resemblance to dextrine; and secondly, the conversion of this glycogenic matter into sugar, by a process of catalysis and transformation."

In discussing the above views, our author makes no mention whatever of the able experiments of Figuier, Sanson and Colin. The still more valuable experiments of Pavy were published too recently to be available to him. In January, 1855, Figuier read before the Academy of Sciences of Paris an excellent experimental paper on the origin of the sugar contained in the liver. In his paper he arrives at conclusions directly opposed to the views of Bernard. He contends that the "liver in man and in animals is not endowed with the power of forming sugar, and that all the glucose which it contains in its tissues comes from without, that is to say, from the nourishment." He demonstrates the presence of sugar in the blood generally as well as in the liver. He deprives blood of its fibrin, and mixes it with three times its weight of alcohol at 36° C. "After a few minutes the blood is completely coagulated into a clot of a beautiful red, by the simultaneous precipitation of the globules and of the albumen of the serum. It is then strained through a piece of cambric muslin and pressed, and the residue is washed with a little alcohol. The liquid, when filtered, passes through almost colorless, manifesting an alkaline reaction." Acetic acid is then added, and the whole evaporated upon a sand-bath. A small portion of albumen is thrown down, leaving a residue containing glucose in combination with certain mineral salts. The glucose is readily detected by Trommer's test, and by fermentation. Figuier, by this process, found in the liver of the rabbit one per cent. of glucose, and in the blood of the same animal fifty-seven per cent. In the blood of the ox he found forty-eight per cent., and in that of man fifty-eight per cent. From his experiments, he concludes that "the liver would contain, in equal weight, scarcely twice as much sugar as the blood contained in other parts of the body." He accounts for this difference by regarding the liver as the storehouse in which is concentrated or accumulated, preparatory to its delivery into the circulation, all the glucose formed during digestion. Sanson* found glycogenic matter in the portal blood of both the herbivora and carnivora, and Colin detected it in the chyle of these animals. Sanson regards the glycogenic matter of Bernard as dextrine, a substance which he says is found in the blood and various structures of the body, as well as in the liver. This latter organ does not produce glycogene, but merely abstracts it from the blood, and transforms it into sugar with greater activity than any other part of the body. Still more recently Pavy* attempts to show that the so-called "glycogenic function" of the liver is a post-mortem phenomenon, sugar being formed in this organ after death by the fermentation of hepatine—"a material particularly belonging to the liver, and secreted by it from saccharine, amylaceous, and other principles contained in the blood circulating through its capillaries." Dr. Dalton treats this whole question in a purely physiological manner. Its medical relations are entirely neglected; and yet these relations are of the highest importance, for the rational treatment of diabetes mellitus, for example, must to a great extent be conducted in reference to such investigations which are calculated to throw light not only on the treatment, but also on the nature and prophylaxis of this disease.

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* Brown-Séquard's Journal de la Physiologie, April, 1858.

Chapter ten, on the spleen, contains nothing new or specially interesting.

The next chapter treats of the blood, to the consideration of which fluid our author devotes 19 pages. Milne Edwards's account of it occupies 339 pages of the first volume of his elaborate work. The reader will, of course, understand from the title of his work, that Edwards does not confine himself to the description of human blood alone. In his description of the structure of both the red and white corpuscles, Dr. Dalton is in positive conflict with the opinions entertained upon this subject by the most eminent physiologists and microscopists. He says that each blood-globule consists of a mass of organized animal substances, perfectly or nearly homogeneous in appearace, and of the same color, consistency, and composition throughout. In no instance is there any distinction to be made out between an external cell-wall and "an internal cavity." He also denies the existence of a nucleus in the white corpuscle, regarding it as "merely an appearance produced by the coagulating and disintegrating action of acetic acid upon the substance of which it is composed." He maintains, furthermore, that the red and white globules are distinct and independent anatomical elements; that the latter are never transformed into the former, and that it is not at all probable "the red globules are produced or destroyed in any particular part of the body." Did our space permit, we might readily cite many authorities against these peculiar though not entirely novel views.

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* Guy's Hospital Reports, October, 1858. See also the Pacific Medical and Surgical Journal, April, 1859.

In chapter twelve, respiration is described in the same clear, concise and happy manner which characterizes other portions of the work. The renovation of the air in the pulmonary lobules and vesicles is accomplished, according to our author, by the inspiratory and expiratory movements of the chest, by the diffusive power of the gases which are interchanged, and by ciliary motion. The thoracic movements account very well for the introduction of fresh air into, and the discharge of foul air from, the trachea and larger bronchial tubes. Gaseous diffusion alone will not account for the transference of the fresh air from these tubes down into the pulmonary cells. Dr. Draper has shown that this transference, if conducted on that principle alone, would require a period greatly beyond the time occupied by one respiratory act, which is about three seconds and a half.* A force auxiliary to that of diffusion is therefore required to accomplish this transfer. This force Dr. Dalton finds in ciliary motion, which, he says, produces a double stream of air in each bronchial tube; "one current passing from within outward, along the walls of the tube, and a return current passing from without inward, along the central part of its cavity." We are inclined to think that ciliary action is scarcely sufficient to establish such regular and efficient currents. Kirkes and Paget believe that the continual vibration of the cilia may serve to prevent the adhesion of the air to the moist surface of the bronchial membrane. Todd and Bowman regard these cilia as agents of expectoration simply. Williams attempts to prove, and we think successfully, that these motive organules enact no part in the office of respiration, but subserve a merely mechanical purpose in the process of excretion.† We are inclined to think, with Dr. Draper, that physiologist of lofty and comprehensive views, that in the circular organic fibres of the bronchial tubes, we are to look for the agent which assists diffusion in bringing about an interchange of gases in the pulmonary cavity. The observations and experiments of Reisseisen, Meckel, Laennec, Williams, Longet, and Volkmann, show that the lungs are not passive organs, as Mayow thought, but in reality exhibit decided contractile power. During inspiration the entering column of air must put the muscular and elastic tissue of the bronchial tubes upon the stretch; during expiration force is generated by the active contraction of the muscular fibres, and the passive recoil of the elastic tissue. Dr. Radcliffe Hall‡ thinks that the force thus

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[*] American Journal of Medical Sciences, April, 1852.

[†] Cyclopedia of Anatomy and Physiology, parts 45, 46; Organs of Respiration, by Dr. Thomas Williams.

[‡] Transactions of the Provincial Medical Association, 1850.

engendered assists materially in the expulsion of air from the lungs. To this opinion it is objected that the contraction of the bronchial tubes during expiration, especially if it occurred at the commencement of the latter act, would tend to arrest rather than hasten outward the advancing aerial column. According to Dr. Draper, "the carbonic acid, vapor of water, and excess of nitrogen, if any, that have accumulated in the cells belonging to any given bronchial tree, are expelled therefrom by the muscular contraction of the circular organic fibres, and are delivered into the larger bronchial tubes, in which diffusion at once takes place with the air just introduced. As soon as the expiration is completed, relaxation of the muscular fibres occurs, and the passages and cells dilating, both through their own elasticity and the exhaustive effect arising from the simultaneous contraction of other bronchial trees, fresh air is drawn into them, the alternate expulsion and introduction being accomplished by muscular contraction and elasticity, the different bronchial trees coming into action at different periods of time, some being contracting while others are dilating." The passage of oxygen from the air-cells into the blood, and of carbonic acid from the blood into the pulmonary vesicles, is regarded by Dr. Dalton simply as a "double phenomenon of exhalation and absorption." It is an obscure and very complex process, in which a powerful condensing action is brought into play by the walls of the air-cells and the coats of the pulmonary capillaries. Dr. Bennett, unacquainted with the instructive experiments of Dr. Draper and the late Dr. J. K. Mitchell, still adopts the fallacious statements of Valentin concerning the diffusion exchanges of oxygen and carbonic acid. Dr. Dalton, better informed upon this subject, avoids this error.

In the next chapter, (thirteen,) on animal heat, Dr. Dalton concludes that this "phenomenon results from the simultaneous activity of many different processes, taking place in many different organs, and dependent, undoubtedly, on different chemical changes in each one. * * * The numerous combinations and decompositions which follow each other incessantly during the nutritive process, result in the production of an internal or vital heat, which is present in both animals and vegetables, and which varies in amount in different species, in the same individual at different times, and even in different parts and organs of the same body."

The next three chapters treat of the circulation, secretion, and excretion, and terminate the section on nutrition. The chapter on the circulation is graphically written, and handsomely and judiciously illustrated. Dr. Dalton adopts Harvey's theory of the movements of the heart, and follows very closely the admirable description of these movements long ago announced to the world by that eminent and truthful observer, who, after "having frequent recourse to vivisections, employing a variety of animals for the purpose, and collating numerous observations, thought that he had attained to the truth, and discovered both the motion and the use of the heart," though at first he "found the task so truly arduous and so full of difficulties, that he was almost tempted to think with Fracastorius," as he informs us, "that the motion of the heart was only to be comprehended by God." Our author having satisfied himself, by positive experiment, of the truth of the systolic theory, takes no notice of that other theory—the diastolic—which attributes the impulse of the heart to dilatation of the ventricles, and which, though generally regarded as a modern view, is in reality the older theory, as may be seen from the following paragraph from Harvey's writings :—

> "It is generally believed that when the heart strikes the breast, and the pulse is felt without, the heart is dilated in its ventricles and is filled with blood; but the contrary of this is the fact, and the heart, when it contracts, (and the shock is given,) is emptied. Whence the motion, which is generally regarded as the diastole of the heart, is in truth its systole."

From this hasty survey of the first section of his work, it will be seen that Dr. Dalton very philosophically treats of nutrition not as one of several functions, but as a highly complex process, made up of many and diverse acts, whose great object is not only to provide for the reception of aliment, and its assimilation or conversion into the various tissues and organs, but also to preserve these parts from disease by the constant removal of effete particles by exuration and excretion. Dr. Bennett also regards and treats the function of nutrition as a compound one. He divides it into five stages, viz. :—1st. The introduction into the stomach and intestinal canal of appropriate alimentary matters. 2d. The formation from these of a nutritive fluid, the blood, and the changes it undergoes in the lungs. 3d. Passage of fluid from the blood to be transformed into the tissues. 4th. The disappearance of the transformed tissues, and their reabsorption into the blood. 5th. The excretion of these effete matters from the body in various forms and by different channels. "We believe," he very correctly observes, "that it is only by understanding nutrition in this enlarged sense, that we can obtain a correct explanation of the dependence of one process upon another, as well as of those important affections which may appropriately be called diseases of nutrition."

The second section of Dr. Dalton's work is devoted to the consideration of the nervous system. Dr. Bennett also treats of the "function of innervation," directly after that of nutrition. Dr. Dalton divides his account of the nervous system into six chapters, which severally treat of the general character and functions of the nervous system; nervous irritability, and its mode of action; the spinal cord, brain, cranial nerves, and great sympathetic. As far as it goes, this section is admirable; but as it does not go as far as it should, we are compelled to say that on this account, and on this account only, it is also objectionable. For the omissions are sufficiently grave and numerous to impair seriously the value of this work as a physiological *text-book.* All that is said about the physiology of the senses, is contained in about thirty lines of the chapter on the cranial nerves. The mechanism of the eye and ear, the physiology of vision, audition, taste, and touch, are altogether omitted. The brief description of the minute structure of the nervous centres contains no allusion to the recent laborious researches of Jacubowitsch and Lenhossek. The labors of the former, particularly, are well calculated to throw light upon the pathology of some of the most obscure neuroses, as well as to clear up many of the dark points in the physiology of the nervous system. These investigations were noticed by Flourens, before the *Académie des Sciences*, in the most eulogistic manner. In a physiological treatise designed for students and physicians, such omissions are altogether inexcusable. Even in the physiologico-pathological primer of Dr. Bennett, (we say primer, for it claims to be, and really is nothing more,) the special senses receive as much space as their importance and the size of the volume require. It is true, that in his preface, Dr. Dalton says that "physiological questions, which are in an altogether unsettled state, as well as purely hypothetical topics, have been purposely avoided, as not coming within the plan of this work, nor as calculated to increase its usefulness." But this apologetic paragraph does not apply to the omissions in question, for many points connected with the physiology of the senses, so far from being "unsettled and hypothetical," are as well established as any in the science, better in fact, as we have already seen, than the glycogenic function of the liver, to which a separate chapter has been devoted by our author. The structure and functions of the pneumogastric nerve and great sympathetic system, are discussed in a manner and to an extent much more in accordance with their importance. In the pages devoted to their consideration, the student will find all that is positively known concerning these portions of the nervous system.

In section third, reproduction is considered in an elaborate, thoughtful, and eminently philosophical manner. Though the last function treated of in the book, it is by far the most prominent. The author appears to have thrown all his energies into the execution of this part of his work. Nowhere does he appear to greater advantage as a physiologist. This, indeed, was to be anticipated, when we call to mind his former labors in this field, "on the corpus luteum of menstruation and pregnancy." We have already specified in the earlier part of this article the various details which constitute the subject-matter of this section. Our exhausted space will not permit us to enter upon the consideration of these details, although all of them are valuable, and some highly interesting, in consequence of involving views at variance with certain generally received doctrines.

Thus far we have considered Dr. Dalton's work as a *text-book* of physiology, "*designed*," as the title-page has it, "*for the use of Students and Practitioners of Medicine.*" Regarding it in this light, regarding it as a book offered to the medical public for consultation upon the numerous facts and details of physiology, we have been compelled, in behalf of both student and practitioner, to point out its deficiencies, which, as already shown, are those of omission chiefly, rather than commission. Were we, however, to pause in our criticism here, we should be guilty of injustice to the author and his work, and should convict ourselves of a glaring want of discrimination. Let us, then, view the treatise before us as coming from the hands not of a mere compiler, but of an original observer, and let us look upon that treatise not as a repertory or magazine of physiological details, which it is far from being, but as a general survey or exposition of the science as a whole, by one of its laborious votaries. Then we discover that the deficiencies which we have noted become consistencies, and that many of the omissions about which we, in common with others, have been caviling per necessity, become evidences of the skill with which the author has selected and grouped his facts into a complete and harmonious whole. Then we discover that the facts and theories necessary to be presented in his exposition of the course of life in man, were laboriously subjected in the crucible of experiment to a rigid analysis, and all that was in any way calculated to strengthen this exposition was retained, while all that was likely to obscure or clog it was cast aside. Herein lies the secret of the remarkable consistency of this book. Dr. Dalton never loses sight of the fact that he is uttering to the world his opinion or theory of physiology as a unit. Hence the facts of one chapter in his work never, as far as we can see, conflict with those of another, as would almost certainly have been the case had the work been a mere compilation instead of a well-digested treatise. Convinced, for example, of the correctness of the systolic theory of the cardiac movements, he teaches it positively, and never alludes to the diastolic theory. Believing that oxygen exists in the blood in a state of solution, and not in a state of intimate chemical combination, he takes good care not to rank this substance among the proximate principles. Satisfied, from his own observations and experiments, that the red globules of the blood are as permanent anatomical forms as muscular fibres and nervous filaments, and that they do not perish bodily in any part of the circulation, he ignores the idea of the transformation of globulin into hæmatoidin or hæmato-crystallin, appearing to believe with Robin and Verdeil, that the blood contains no crystallizable proximate principle of organic origin.

From different parts of his work, we might readily adduce other examples of a similar scope, all going to show that Dr. Dalton has treated his subject in a highly original manner, and that, with much independence of thought, he has rejected some theories ordinarily received, and accepted others less well known, and that he has assigned to many facts new values, elevating some and depressing others in the scale of physiological importance. He makes no copious references to authorities, and indulges in no vain parade of the facts discovered and theories advanced by different physiologists. On the contrary, in every page of his book we find unmistakable evidence that the author is giving us not the views of others, but his own opinions, the value and reliability of which he has conscientiously tested in the most careful and pains-taking manner. His work comes to us, therefore, with an authoritative value, which no compilation, however encyclopedic, or however well arranged, can possess. In conclusion, then, if we were asked our opinion concerning this volume, we should say without hesitation that, as a comprehensive book of reference for the facts of physiology, it is faulty, and in some respects is inferior to the well-known works of Carpenter, Valentin, Kirkes and others; but as a compendious and graphic treatise, as a lucid and concise exposition or summary of the leading or fundamental principles of the science of life in health, it is not only superior to the works just mentioned, but in many particulars is perhaps unequaled. The "getting up" of the work is in every respect admirable. Paper of a superior quality, excellent typography, and numerous wood-cuts, as novel in design as they are handsome in execution, give to it an attractiveness which speaks loudly in praise of the liberality and enterprise of the publishers, who have evidently been determined to clothe the valuable and instructive teachings of the author in a most beautiful and appropriate dress.

The elementary volume of Dr. Bennett is also deserving of commendation—not so much for the number and variety of its facts, as for the clinical spirit with which the truths of physiology are inculcated. Dr. Bennett, as we have already intimated, is not so much a physiologist as a physiological physician—a practitioner who finds in physiology the scientific basis of his art. The character of his mind, in this respect, is reflected from every page of his *Outlines*. He neglects no opportunity to remind the student of the exact medical bearings of the more important and useful facts of physiology. This is well shown in the remarks with which the section on nutrition terminates, and especially in the third part of the work which is devoted to "pathological physiology," and which contains, in a condensed form, many of those peculiar views of the author concerning inflammation, blood-letting, etc., which have recently involved him in such an animated controversy with Alison and others, of Edinburgh.

ART. II.—*The Microscope, in its Application to Practical Medicine.* By LIONEL BEALE, M.B., F.R.S., Physician to King's College Hospital, etc. Second edition. With 270 Wood-cuts, and a Colored Plate. 8vo., pp. 390. London: John Churchill, 1858.

THE prominence assumed by the microscope as a means of medical investigation has of late years led to the issuing of works designed to aid those who would use it, or to set forth the results obtained with it. And each of these objects involves two minor divisions: the former includes the optical principles of the instrument and its accessories, and the various appliances, processes, etc. belonging to the practical pursuit of this branch of study; the latter embraces normal anatomy and pathology. Each of these four subjects is of great extent and importance; the last two especially have been discussed in works which, voluminous as they are, cannot be called too much so. The microscope must be regarded as an optical instrument; and its employment in medical research merely enables us to see what we could not discover without it. Were it not for the manipulations required in the preparation of specimens, etc. and the various accessory apparatus employed, the only difference actually existing between this instrument and a pair of spectacles would be in the degree of magnifying power. Dr. Beale does not, therefore, mean to treat, as the title of his very handsome manual would lead us to expect, of the microscope, but of its use. In the introduction to his first edition, he disavowed the purpose of showing what the appearances were which the microscope revealed; in the present one he, however, assumes this task, which we think he could hardly hope to accomplish by the addition of only eighty-six pages.

A thorough treatise on the "mode of employment of the microscope in medical investigation" would, we think, be of great value to a very large body of observers; and would not need the somewhat apologetic discussion, nearly eight pages in length, which Dr. Beale has seen fit to prefix to his work. We are referred on page 10, however, to another work by the author for certain matters, the consideration of which he himself says would naturally form the introduction to a work on the use of the microscope; but notwithstanding this disclaimer, the ensuing sixteen pages are devoted to these very matters, with elaborate wood-cuts of some very common and familiar articles. Moreover, many of these illustrations are repeated, in connection with descriptions, in the body of the book.

Here, then, as in fact throughout the entire volume, the reader finds that he has bought an advertisement of the author's other productions, and a number of neat, but useless proofs of certain wood-cuts. We do not see how the fact of an author having previously published another book justifies his omitting what belongs properly to the matter in hand; nor do we like to buy wood-engravings of such things as retort-stands and glass shades. The pages so covered might have been rendered very valuable, had they been occupied by descriptions of the best forms of lamps, and other articles. And though a London class may be very much interested to know that "the German lamps lately introduced by Mr. Pillischer gave an excellent light, and can easily be arranged at any desired height," to the scientific world this fact is of no moment. Again, Dr. Beale's personal friends may be pleased to read, at page 363, that Dr. Saunders some time ago presented him with a beautiful specimen of the *trichina spiralis;* but this item of information will not enable the student to recognize that parasite any more readily. Such Cockneyisms and personalities are out of place in a scientific book.

We must confess also that we are entirely at a loss to appreciate the object of introducing Figs. 86 and 87, in which the human fœtus is depicted of the natural size. Nor can we discover the propriety of devoting three pages to the method of ascertaining the specific gravity of the brain,—a matter entirely foreign to microscopy.

Errors in typography, and especially in punctuation, abound in Dr. Beale's book; but passing over these, we meet with some odd expressions, such as "black vomiting," (p. 366,) "colored situations," (p. 371,) placing objects "in the microscope," and a "pneumonic lung," (p. 202.) Dr. Lawrence Smith is, on page 91, said to reside in *Louisville,* United States, and on page 101 he is transferred to *Louisiana;* an error of some importance to any one desiring to correspond with him. A graver cause of complaint we find in the extreme vagueness of such expressions as "under certain circumstances," (page 203,)—a term which might include any imaginable condition. We are told, on page 228, that "Dr. Billroth, in his investigations, found great advantage in the use of sesquichloride of iron for the purpose of hardening the sections" of the spleen; but are left in doubt whether the sesquichloride was in a solid state or dissolved, and if the latter, in what menstruum, and of what strength. These are just the points which should have been given in full in the work before us. "Brunswick black" is a substance quite frequently alluded to; we are told how to get it off our hands, but not how to make it, or even what it is.

Dr. Beale devotes several pages to directions for drawing and engraving objects. Having some practical acquaintance with this matter, we sincerely pity any beginner who may endeavor to follow out instructions so vague and incomplete,—unnecessary for any one who knows how to draw, and utterly useless to any one who does not.

As we have already remarked, our author assumes the task of briefly discussing normal and pathological anatomy. Our limits will not allow us to do more than point out a few of the defects and superfluities which obscure the real object of the book.

In the first place, the want of a systematic arrangement makes itself apparent to any one seeking information upon a special point. There does not seem to have been, in the author's mind, a clear conception of the exact object of his book,—whether he were treating of comparative anatomy, of manipulation, of organic chemistry, or of pathology. His labors would have been no heavier, while those of the reader would have been much lighter, had the separation of these various subjects been more rigid.

On page 150 is begun a curious discussion of the cell-theory, too vague and brief to be of any use, and yet unsettling to the mind of the beginner, since it hints at changes shortly to be worked in our views upon this subject; such changes will not, however, be effected except by closer reasoning than Dr. Beale is prone to.

At page 157 we are told that the phenomenon of endosmosis depends upon the relative densities of the fluids on either side of a membrane; an idea not now generally received.

The liver is made the subject of a rather long and desultory discussion, with very copious references to our author's other publications, but without any allusion to the valuable researches of Dr. Leidy, published in 1848; the supra-renal capsules, although their consideration occupies six pages, are vaguely treated of, and the only advice given is to examine them in thin section. The directions for investigating the kidney are much better.

Upon the subject of the microscopic study of sputa, very good instructions are given. A pair of fine curved scissors will, however, we think, serve quite as good a purpose as the forceps alluded to on page 271, and are much more likely to be at hand.

Urinary deposits are described at some length, and we think that their microscopic appearances would be most appropriately discussed in a manual like this, although Dr. Beale says "it is not compatible with the objects of this work to do more than give a very short summary of the microscopical characters of the principal urinary deposits, and describe the mode of collecting them and the plans adopted for their preservation."

To discuss the pathological conditions upon which the presence of these deposits may depend, belongs to the wide subject of diseases of the genito-urinary apparatus, and would demand a far larger space. The section on "spermatozoa," (more properly called *spermatozoids,*) might, we think, be condensed to about five lines.

On page 323, after being told that the dumb-bell form of crystal is presented not only by oxalate of lime, but also occasionally by urate of potassa, phosphate of lime, and uric acid, we find a statement that "dumb-bell crystals possess the same chemical characters as the octohedra of oxalate of lime."

Our author's expressions in reference to morbid growths are very vague; he says, for instance, on page 339, that "by simple hypertrophy of the subcutaneous areolar tissue of the leg and foot, or of that of the scrotum, most formidable diseases are caused;" on page 347, "by some the *ovarian tumour* is considered as a form of *colloid*, but, its history and mode of development differ from the gum-like growths met with in other localities." (The italics and punctuation of this sentence are as in the original.)

Fig. 248, on page 341, is said to represent a nucleated fibrous tumor from the tongue; but it has to us very much the appearance of an epithelioma, containing masses of epithelial cells, concentrically arranged and surrounded by a fibrous stroma.

The directions given for the examination of morbid growths are very good, and we particularly agree with Dr. Beale in advising that accurate details of every observation should be entered in a note-book kept for the purpose. Much more space might very well have been devoted to a description of the methods employed for keeping specimens.

Parasites, animal and vegetable, form the subject of the last chapter, but are not fully or practically discussed.

Three years ago, we procured a copy of the first edition of Dr. Beale's book, attracted by its very beautiful appearance, and relying upon the high estimate set upon it by critics. But we have not found it useful as a manual, while it is altogether unsatisfactory as a scientific book. Such subjects as the author admits to be within the scope of his work, he either treats briefly, or refers us for their discussion to some other of his publications; such as he might well exclude, he sets forth vaguely and discursively. No one can hope to bring within the compass of 377 pages even a compendium of practical microscopy, minute anatomy, and material pathology; but when space is wasted in needless illustration and personal compliment, and irrelevant subjects are introduced, when important points are slurred over and trifling ones enlarged upon, the elegant volume resembles a handsome dandy, whose stock in trade consists of his personal appearance and a smattering of small-talk on current topics. Such a man may be very well received, he may even make himself agreeable in general society; but among practical men his limited calibre is very soon evident. In the present state of microscopy particularly, it is highly important that all books bearing on it should be rigidly practical in their character, and that the utmost precision of language should be observed. Microscopists are still in the condition of explorers; and as the field of their research is wide, they want guide-books which give real information as to what has been made out, and available instructions and hints for future investigations. It is with this view that we have expressed the foregoing opinions of Dr. Beale's book; if our estimate of the value of microscopy were less exalted, we should be less jealous of its reputation, and less anxious to have its scientific character maintained.

ART. III.—*The Virginia Springs, and Springs of the South and West.* By J. J. MOORMAN, M.D., Resident Physician at the White Sulphur Springs. With Maps and Plates, and the Routes and Distances to the various Springs. 12mo., pp. 403. J. B. Lippincott & Co.: Philadelphia, 1859.

*A Treatise on Baths; including Cold, Sea, Warm, Hot, Vapor, Gas, and Mud Baths: also on Hydropathy and Pulmonary Inhalation; with a Description of Bathing in Ancient and Modern Times.** By JOHN BELL, M.D., etc. etc. Second edition. 12mo., pp. 658. Lindsay & Blakiston: Philadelphia, 1859.

HYDROLOGY, in its application to hygiene and therapeutics, is beginning to acquire that importance to which it is so eminently entitled. To our thinking, it is time that the virtues of water, both in its internal and external use, for the preservation of health and the cure of disease, should receive its proper share of consideration. A thorough study and due appreciation of the subject will, we are convinced, go farther than any other course of investigation and analysis to simplify the practice of medicine, while pathology, in its large and proper sense, will still receive its full share of attention. As has been said by an author familiar with the subject:—

> Gifts freely dispensed are seldom appreciated at their just value or received in a suitably thankful spirit. The air which we breathe, and by which we live, would seem to be regarded by civilized man as something intrusive,

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* The superscription to the title conveys an apothegm—Water as a Preservative of Health, and a Remedy in Disease.

if not positively noxious, which must be carefully shut out from his habitation, and from all the edifices in which he meets his fellow-men for the purposes of religious worship, of commerce, of amusement, of law and legislation. The water, which in a state of vapor fills and makes up so much of the atmosphere, and which in its fluid state is both food and the vehicle of all that is nutrimental in organized beings, and the imbibition of which by them is a necessary condition for their growth, maturity, and fruition, is too often looked at askance, by the same civilized man who takes all possible pains to alter the properties, while impairing the purity of this universal fluid and menstruum, by mixing it with the distillations of art, and the products of the vat and the wine press, not to speak of the so-called liquors and cordials compounded of all these, and as if devilish ingenuity was still unsatisfied, drugged with recognized poisons of every kind. On the same line of gifts beneficently bestowed on man, but either held at a cheap rate, or neglected by him, are Mineral Waters, which jet out from nearly all parts of the earth's surface; compounds, often of the most varied chemical elements, prepared in Nature's Laboratory and Nature's Pharmacy, ready for use, and adapted to the cure of multifarious diseases, as simple water is to the preservation of health. What a contrast between, on the one hand, the alcoholic and narcotic adulterations of water, to gratify a perverted appetite, and to excite and so generally derange the functions of the organism; and, on the other hand, the addition of earthy and mineral salts which the water receives in its percolation through different strata; and thus when it gushes up as a spring, it is found to be endowed with sanitary and therapeutic virtues, so great and so diversified, that it has sometimes been said, a region of mineral springs is a region of miracles! Equally striking is the difference between the destructive distillation of the nutritive cereals and fruits into ardent spirits, and the conservative distillation of simple water, when in its deep, subterraneous course among primitive rocks it is subjected to central and volcanic fires, and converted into vapor, which, ascending from this great natural alembic, is condensed in the upper strata into thermal water, and a little later becomes in this state a gushing thermal spring. For the most part, the water, if of a temperature so elevated as to bring it under the category of a warm or of a hot spring, is but slightly mineralized, and it is sometimes more exempt from foreign substances than even the water of common springs in the same region of country.

It is with mineral waters as with most of the articles of the Materia Medica. Their remedial virtues were known as matters of experience long before the basic elements and proximate principles were discovered. Chemical analysis, which has revealed to us the intimate composition of these waters, is, if it be viewed as a means of guiding us to an acquaintance with their therapeutical use, secondary in the order of time as it is in the scale of experimental observation. It may confirm, but does not originate our belief, and, at the best, it can only be regarded as suggestive, in as far as it exhibits in the water of a recently discovered spring, a medicinal substance or medicinal substances identical with those in the water of another spring, the curative powers of which have been ascertained by long experience. A knowledge of the chemical constituents of a mineral water is also suggestive in another way, by leading the physician to more diversified clinical trials of the curative effects of the water than would otherwise have been attempted. Chemistry, in its suggestive relations to the therapeutics of mineral waters, enables us to improve our imperfect knowledge of those of our own country, by comparing them with those of Europe in a more precise and positive manner than could be done were we to rest the comparisons merely on their sensible properties. Thus, for example, from the long and fully recorded experience of the medicinal virtues of any one chemical division of the mineral waters of England, France, Germany, or Italy, we may obtain, if not rules, at least pregnant hints, to aid us in directing the use of waters of a similar chemical division in the United States. But even here we may be misled by apparent resemblances between two waters, which have an active principle—sulphur or iron, for instance, common to both, but which may differ materially in the number and proportion of their saline constituents. This circumstance must be continually borne in mind in the classification of mineral waters, which, like all classifications, is, at the best, but approximative, either as regards resemblances in the characteristics of the individual ones which, grouped together, constitute the class, or the differences which separate them from another group and another class.

The chemical hypothesis of the operation of mineral waters offers an explanation of some of their effects, as evinced in a change of the fluids of the organism. Lithic acid is neutralized by water holding in solution a large proportion of an alkali, and the predominance of this acid in the urine is destroyed, and the alkaline is substituted for the acid reaction, by the use of such a water as that of the Vichy Springs. Demonstrations of this kind do not, however, occur in such number and variety as to authorize a belief in a constant and intimate relation between the chemical constitution of a mineral water, and its chemical action on the organs, with the effect of restoring these latter to the healthy exercise of their functions. In these cases it must be remembered that the removal of a symptom does not necessarily imply the removal of the disease, nor even always the cause of the symptom itself. There is something in the mode of combination of the several constituents of mineral waters, which gives them a therapeutic power not to be measured nor ascertained by an analysis and exhibition of each separate constituent or element. The active principle in a water resembles vitality in the organism, in its being only known by its effects. Looking at the subject in this light, Chaptal might well say, that "chemists only analyze the cadaveric remains of mineral waters." Their life and their spirit disappear in the process of analysis. We must continue, notwithstanding, to look hopefully to chemistry, not indeed for a solution of the problem, but for an increase of the facts which give collateral aid to our causative researches into the subject.*

Analyses may furnish general indications, but they fail to enable us to distinguish the characteristic shades of difference among springs of even the same class. The best, and indeed the only satisfactory means of obtaining an accurate acquaintance with the therapeutical effects of mineral waters, is by carefully made clinical records of cases which were treated by administering them on the spot. Opportunities of this kind were first furnished in France, two centuries and a half ago, by edicts of Henry IV., whose early life was passed in the region of the springs of the Pyrenees. He appointed officers who were charged with the supervision of the baths and mineral springs of the kingdom. His edicts on this subject were confirmed by Louis XV. and Louis XVI. The properties of these waters were studied, by some under the promptings of a scientific zeal and in a spirit of philanthropy; by others, with the hope of finding a remedy for certain diseases of royal personages. Fagon, physician to Louis XIV., examined with care the waters of Bonnes and Barreges, in order to ascertain whether they would be adapted to the cure of the fistula with which that monarch was afflicted. Chirac directed his attention to the waters of Balarac, and sought in them a remedy for the wound of the Regent, the Duke of Orleans.

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* On the Therapeutical Value of the Waters of Mineral Springs. By John Bell, M.D.—*Am. Med. Gaz.*, Jan. 1859.

A still more formal and methodical plan of investigation was set on foot, by the appointment of resident medical superintendents, on whom it was enjoined to keep a regular record of the cases of those invalid visitors at the springs who came under their charge. By a royal decree, issued in 1823, the medical inspectors of the several springs were required to send, each year, to the minister of agriculture and commerce, a report of the diseases which they had observed and treated, or seen treated, during the season for the use of the waters. In order, however, to be able to discharge their duty in this respect, the concurrence or preliminary aid of the medical advisers of the invalids, in their respective homes, is necessary, so that they should be informed of the antecedent history, both of the character and progress of the disease, and of its therapeutical treatment. Often the malady persists during the period of the use of the waters, or the season, as it is called, of three or at most four weeks duration, and it may, on the return home of the patient, become aggravated, or be amended or cured; circumstances these, which put it out of the power of the medical inspector, or other resident physician, to complete the history of the cases of those who resort to the springs, for the purpose either of drinking its water or using it as a bath, or often of employing it in both ways. Then again, many follow the directions, in these respects, of their own professional advisers; while others, after having consulted one or more physicians, follow ultimately their own notions.

Of 4500 persons who took the baths at Rennes, in the years 1847, 1848, and 1849, we are told by M. Cazaintre, the medical inspector, that he was called on to see only 611 out of this whole number. It is a lamentable thing, writes M. C., in his report, to see numbers of persons take the baths and drink the mineral waters to excess, without considering the nature or stage of their malady, or the susceptibility of their organism. Hence, in this irregular condition of things, some take the baths who ought only to drink the waters, and others drink the waters who ought only to bathe; a third party, in fine, have recourse to both baths and drinking the water, and others in abstaining rigorously from all. How often, continues M. C., has it not happened to me to send away patients who labored under hypertrophy of the heart, or who had reached the last stage of pulmonary consumption, or who would have inevitably perished in the bath from a stroke of apoplexy, if chance or an aggravation of their sufferings had not made me cognizant of their condition, and enabled me in time to forbid all thermal treatment! In view of these abuses and evils, the Commission on Mineral Waters, appointed by the French government, in its report for the years 1849 and 1850, recommends strongly such stringent regulations as would prevent any person from making use of mineral waters, without the authorization of the superintendents of mineral springs, or the prescription of some other physician.

The preceding picture falls short of representing the state of things at the watering places in the United States, all of which are without medical superintendents, and not a few are destitute of resident physicians; and at which, more than in France, the visitors acting, we must suppose, under certain notions of their reserved rights, to do what they like with their own, or, more probably, without a definite notion of any kind, commit all sorts of extravagances in bathing in and drinking the waters of mineral springs.

These observations on the means of ascertaining the medicinal virtues of mineral springs and of the steps elsewhere taken to reach positive conclusions on this point, as also a notice of the impediments offered by the ignorance of the invalids, who are the parties most interested in a solution of the problem, cannot be regarded as an inappropriate introduction to a rapid analytical sketch of the new edition of Dr. Moorman's Treatise on the Virginia Springs, which now includes a succinct account of the Springs of the South and West. This gentleman, as we learn from his preface, has directed his special attention for more than twenty years to the investigation of the nature and medicinal application of mineral waters. During this time he has resided throughout each season, in which the waters were used, at the White Sulphur Springs, where, in the character of resident physician, he has enjoyed ample opportunities of witnessing the various and modified effects of the water, in almost every variety of disease and state of the system. But, although his headquarters have been at the springs just named, he has not neglected the others, which are so bountifully spread over the southwestern region of Virginia.

Of them he speaks appreciatively, both from the results of his own occasional visits, and, still more, from the medical and other testimony of persons on the spot.

Looking to the fact of the existence of the valuable mineral waters of *Capon* and *Berkeley*, at the northern, and the recently discovered waters at the southern extremity of the line of our great Apalachian chain, the Virginia Spring Region must, Dr. Moorman thinks, be looked on as occupying a larger area than has hitherto been supposed, and as embracing the entire length of the Alleghany, from the Potomac to the extreme southern terminus. "Errors in Spring Nomenclature" are pointed out by the author, as in the instances of the so-called alum waters, the efficacy of which depends not merely on the presence of this salt, but on its association with other salines, giving a resulting compound *sui generis;* and the sensible effects of which, in their acting as a mild purgative, for example, are quite different from those of alum or of a simply aluminous water. So also in the terminology of various sulphur springs derived from the presumed color of the waters; and hence the designations of *White, Red, Blue, Gray, Black, etc.* "convey no idea at all of the quality or appropriate medical applicability. The natural deposits of all sulphur waters, uninfluenced by foreign bodies, are essentially of the same color, being white or opake-white; the various shades of red, blue, gray, black, etc. are occasioned by the influence of light or shade, or by chemical changes produced by contact with foreign bodies."

In the chapter given to the consideration of mineral waters in general, the author deplores the want of information, both among physicians and the public at large, in regard to this class of medicinal agents, and the mistakes and injuries thence resulting. Remarks are made on the *modus operandi* of mineral waters, their alterative action, their inapplicableness to acute diseases, and their adaptation to chronic ones. In giving place to the following remarks, we believe that we shall express the views of Dr. Moorman as we certainly shall our own on these points:—

> Mineral waters are, for the most part, exciting; and hence they are contraindicated in acute diseases, and in those marked by much irritation or excessive excitability. They are illy adapted to persons of a sanguine temperament or a plethoric habit, and to those liable to cerebral congestion or to hemoptysis. How often does it not happen that judicious resident physicians at the springs are obliged to send away patients suffering from hypertrophy of the heart, or aneurism of this organ and of the great vessels, or who have reached the last stage of phthisis! Physicians do not always seem to consider, that chronic disease, which has been intractable to a great variety of treatment, and is regarded as incurable, is therefore a fit subject for all kinds of experiments. That which is bad must not become worse under our hands—as when a chronic is converted into an acute inflammatory disease, and that which might have dragged its slow length along

for years, is suddenly stopped short by death. The plea of giving the patient an additional chance of cure by sending him to watering places, either for the purpose of drinking mineral waters or of bathing, without a due appreciation both of the primary operation and subsequent effects, therapeutically considered, of the means thus employed, as well as of the precise character of the disease, is not a valid one. More than this is due by the physician to his patient. To recommend or assent to the use of a new remedy or a new plan of treatment, without making one's self master of what was previously known on the subject, or, at any rate, of the general results that may be expected, is worse than empiricism; for this does plead some analogous antecedents in its favor. We dare not say how many physicians, who send their patients to a mineral spring merely because it has acquired vogue, or has become a place of fashionable resort, come under this censure. The reputation of a mineral water ought to rest on something more positive than traditional or oral evidence; and yet, in many instances, it is sustained by little else than this. One season at the springs is but the echo of another, and of the crowd who resort to them from mingled motives of health and pleasure, how few come away with a clear perception of the influence which the use of the waters exerted on them, either for good or for evil! Many, perhaps we might say the majority of the invalids who visit these places, do so often in ignorance of their real malady, and with very vague notions of the efficacy of the water; which, notwithstanding, they set about drinking as if for a wager or in fulfillment of a vow. Nor can we attach much importance to the opinion of a medical man, whose experience is limited to that gained by the stay of a week or two at the spring, and whose attention had not previously been directed to the entire subject of the therapeutical effects of the different kinds of mineral waters. Time is not given him to study their operation on himself, if he be the invalid, and still less on others, of whose antecedent history he is ignorant, and whose treatment by the use of the waters he has not had an opportunity of superintending nor of becoming minutely and methodically acquainted with it through the means of a third party.*

We commend the following observations of Dr. Moorman, which are evidently the result of experience and clinical study:—

"Some mineral waters, by varying the method of their administration, or by the interposition of appropriate adjuvants, are capable of extensive and valuable modified actions and effects upon the human body. The White Sulphur is susceptible of as many varied, different, and modified actions upon the system generally, and upon its particular organs, by varying the methods of using it, as is *mercury*, or *antimony*, or any of our leading therapeutical agents. For instance, it can be so used as to *stimulate* distressingly; or, without any *appreciable stimulating effects*. It can be so given as almost invariably to *purge actively;* or, without lessening the quantity producing such effect, but merely by changing the time and manner of taking it, it can be so given as to exert little or no cathartic operation. It may be directed to, or restrained from, the

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* Bell, *ut supra.*

kidneys, or skin; and what, in a general way, is far more important, it can be so used as to *lie quietly* in the system, producing no excessive action upon any of the organs, and, with a quiet but sure progress, go on breaking up the obstructions in the glandular organs and removing the impediments to the proper discharge of their functions: equalizing the circulation, removing chronic inflammations, and generally restoring the energies of the system."

The effects of the *White Sulphur Water* upon the human body are represented by the author to resemble mercury in several respects; as, for instance, in its producing salivation under peculiar circumstances, and its requiring a removal of a phlogistic condition of the system before its proper and alterative effects can be obtained. "Changing from spring to spring," merely for change sake, and without allowing time for the water of any one spring to produce its best effects, or without reference to its operation on the system, meets with the merited animadversions of the author. The combined use of medicines and of different mineral waters, is the subject of another chapter. It is one, as the author justly remarks, of primary importance, but which may be summed up in a few words. As a general thing, our chief, and in the great majority of cases of chronic disease, those to which alone mineral waters are adapted, our sole reliance will be on their use during the time of the invalid's sojourn at the springs. If an invalid is still suffering from the remains of an acute disease, or of a phlogosis, his system must be brought down to the line of chronicity by suitable therapeutical treatment, or if acute symptoms supervene on chronic ones during the drinking of the waters, their use must be suspended, and the usual remedies directed in the same manner as if the patient were at his own home. But when we have to deal with a chronic disease, in which the waters of a mineral spring are both tolerated and act on the organs in a marked manner, we ought to withhold all the ordinary pharmaceutical agents, and allow medical hydrology full time and opportunity for the display of its benign effects. If the desired relief is not obtained, or if it is thought to be necessary to act on organs which are not impressed by the waters of the spring at which the invalid is staying, then comes the time for a change to be made, not through caprice or impatience, but for reasons understood and assigned by the resident and prescribing physician. By judicious changes made under the advice of a competent and experienced observer of this class, the invalid might realize all the benefits of the successive or alternate use of a series of mineral springs. Thus, for example, the treatment of a case of visceral congestion might be begun by drinking the water of a spring of the saline aperient class, and continued by that of a sulphureous and then a chalybeate water, with occasionally the judicious interposition of a gaseous one. A course of this kind would be in harmony with that pursued in the treatment of most diseases by ordinary therapeutic treatment. It would secure, moreover, a distribution of invalids among the different springs, and additional variety and change of scene, with fresh inspiring hopes, in thus going from one spring to another.

These views are well presented by Dr. Moorman, both under the head above mentioned and also under that of "Prescribing Mineral Waters." He shows a proper discrimination of the distinctive remedial properties of each spring, and, consequently, warns against the extreme and extravagant eulogies of any one.

We are not able, in the small space allotted to us, on the present occasion, to follow the author on the early history, topography, and chemical constituents of the several springs of which he speaks,—beginning with the celebrated White Sulphur. His experience of the circumstances under which invalids derive most benefit from the use of the waters of this spring, by drinking and bathing, is entitled to great deference, if not entire adoption. On one point he lays great stress, viz.: the necessity, in certain cases described by him, of letting the sulphuretted hydrogen gas escape from the water before it is drunk. We shall not follow him in his arguments in favor and explanation of his practice in this particular; but would merely remark, that he shows good cause for the distinction which he makes between the effects of the gaseous and non-gaseous water of the White Sulphur Spring. Much of what is said in the volume before us, under the head of "General directions for the use of the White Sulphur water," was anticipated in a previous chapter on "Mineral waters in general." In fact, if we are thoroughly acquainted with the principles which ought to govern in directing the use of the entire class, we shall have little embarrassment in dealing with each separate spring—as regards time, dose and repetition of dose, and hygienic rules to be observed by the invalid at the springs.

Dr. Moorman enumerates the diseases to which the White Sulphur waters are more immediately adapted, and adds a few succinct directions for their appropriate use. In dyspepsia, in which, when it has lasted some time, the author, following the general Southern belief, tells us that we almost invariably find the biliary secretions either vitiated in quality or deficient in quantity, this water has long maintained a high character. We may dispute the soundness of his pathological explanation, while admitting the facts furnished by his experience of the relief and cure, also, of this troublesome malady, after a suitable course at the White Sulphur Springs. He cautions against the mistaking of primary effects for a permanent and constitutional change, which is the necessary condition for recovery, and which requires a longer time and more perseverance in the treatment than invalids, who already, after a short trial, think themselves well, are inclined to give. "Chronic Gastro-Enteritis, or Irritation of the Mucous Membrane of the Stomach and Bowels," is believed by the author, and not without good reason, to be the disease, with its multifarious symptoms and concomitants, under which the largest class of invalids who visit our mineral springs suffer. The causes are readily found in excessive alimentation, the drinking of wine and liquors, drugged often by poisonous substances, fast eating, chewing and smoking tobacco, and the immense consumption of strong coffee, on the one hand, and an incessant strain on the brain, in all the divisions of labor and pursuit after wealth and political preferment, on the other. Associated with intestinal derangement in the female, are leucorrhœa and chlorosis, with the not unfrequent concomitant of hysteria.

"Diseases of the Liver" naturally engage the attention of Dr. Moorman, whose observations on their pathology, and the adaptation of sulphur water to their different stages and complications, merit careful perusal. In *costiveness* and in *hemorrhoids*, this water displays considerable efficacy. "Incipient calculous affection is relieved by the water, pretty much in proportion as it corrects the digestive and assimilative functions, improves the blood, and brings the general economy into a natural type, preparing the kidneys to resist foreign encroachments upon their functions, and to elaborate, from healthy blood, proper and healthy secretions." Diseases of the female sexual organs, chronic affections of the brain, nervous diseases, are passed in review, and the particular conditions under which the White Sulphur water may be used in them with advantage, are stated by the author. While warning against the employment of the White Sulphur water in *tubercular phthisis*, Dr. Moorman points out its good effects in what he calls *sympathetic consumption*, and in *bronchitis*. Consistent with his dominant pathology, that the chronic derangement of the function of any organ extends itself to others, Dr. Moorman thinks that in the restoration of the lost balance, and especially of the functions of nutrition and the secretions to their healthy rhythm, must we look for a removal of the predominant and evident disease. Taking an enlarged view of this kind, respecting the etiology and connections of skin diseases, he finds an explanation, and, we believe, a true one, of the great benefit in them by drinking the sulphur water, and its use conjointly as a bath. *Rheumatism, gout, dropsy, scrofula,* in certain forms and stages and under specified circumstances, find, in many instances, their cure in the sulphur water. *Mercurial diseases* and *secondary syphilis,* are, in the author's opinion, more certainly removed than other morbid conditions which we are called upon to combat by recourse to the White Sulphur water. If we refer to what is said of "Diseases of the Heart," in connection with sulphureous water therapeutics, it is to repeat the warning of the author against this agent in hypertrophy of the organ. He takes care to discriminate between organic disease and sympathetic affections of the heart, in many of the latter of which the sulphur water is beneficial.

Dr. Moorman next directs our attention to the situation and chemical composition and remedial value of the other Virginia Springs, in the region of the White Sulphur ones. Opportunity is not allowed us to give much more than the titles of these health-conferring fountains, nor to repeat the appreciative notices of them in the volume before us. With a family resemblance of the sulphureous springs to each other, there are, however, distinctive traits belonging to each, which entitle them to a separate study as therapeutic agents. Among these we may mention the Salt Sulphur, the Red Sulphur, the Blue Sulphur, the Roanoke Red Sulphur, Daggar's or Dibrell's, the New-River White Sulphur, and the Montgomery White Sulphur Springs. In reference to the reputed effects of the water of the Red Sulphur Springs, in pulmonary affections with irritative fever, we could have wished that Dr. Moorman had adduced more recent and enlarged experience, in addition to the over-sanguine representations made by the late Dr. Hunt, of Washington City. The efficacy of the Salt Sulphur water as a more active cathartic than any other one "of the geological region in which it exists," while at the same time it is neither harsh nor violent, is displayed in that form of dyspepsia in which constipation is a leading and troublesome symptom. "This water, like all our sulphur waters, will sometimes distinctly reduce the frequency and force of the pulse," not, however, by any direct sedative action upon the circulation, but by its deobstruent operation on the viscera generally, in restoring and increasing the secretions. The Salt Sulphur Iodine Spring, in the vicinity of the one just noticed, has attracted attention of late years, and has been used in various glandular and other affections, —rheumatic, syphilitic, and chronic cutaneous, in which iodine has been found serviceable.

The Thermal Springs of this region furnish all desirable balneological varieties for the necessities and tastes of invalids. The "Warm Spring," with its glorious bath and a temperature adapted to a vast majority of those who can indulge in warm bathing, merits, if merely as ministering to a luxurious indulgence, a visit from remote parts of the Union. The "Hot Springs," a few miles distant, give also, in their different temperatures, means for warm as well as hot and vapor bathing. Still of the thermal class, is the water of the Sweet Springs, but of just such a reduced temperature, 73° F., as adapts it to a large class of bathers, whose systems soon react after the first slight shock of immersion. Under the same head we must rank the Holston Spring, the water of which is of a temperature of 68·5° F., and also the Red Sweet Springs, of a temperature of 75° to 79° F.

The "Sweet Springs" and the Holston belong to the mild saline class, a more active example of which is furnished in the Alleghany Spring, in the County of Montgomery, near the Virginia and Tennessee Railroad.

Another and somewhat peculiar class of saline springs, in this region, is that known commonly under the title of "Alum Springs," the waters of which contain, in addition to the ordinary salines, chalybeates, and also aluminous salts, and an excess of sulphuric acid. The chief of these are the Rockbridge and the Bath, Pulaski, and New London Alum Springs, and one of Stribling's, and the Yellow Springs. In quite another region, or in Lower Virginia, at Richmond, is the Church Hill Alum Spring. Of the simple chalybeate water, Rawley's Spring furnishes the most active. Next will come the "Rockbridge Baths," equidistant from Lexington and Goshen Depot, on the Great Central Railroad.

In the northeastern portion of Virginia, within a few miles of the Potomac and near the ridge of the North Mountain, are the Bath, or "Berkeley Thermal Springs," (72° to 74° F.) These Springs exchange visitors with the Bedford Springs of Pennsylvania, from which they are distant only a day's ride. In a southeast direction from the Berkeley, and at the foot of the Blue Ridge, on the other side of the great valley, are the saline "Shannondale Springs," on the line of the railroad from Harper's Ferry to Winchester, and five miles distant from the latter place is "Jordon's White Sulphur." Continuing up the valley and on the road to Staunton, we meet with "Bonner's Springs" or the Seven Fountains—blue and white sulphur, chalybeate, freestone, slate and limestone, and willow. A road branching off from Winchester takes us to the Capon Springs, with their fine body of water and good air and good cheer for those who visit them. Below the Blue Ridge, and near the branch railroad from Alexandria to Warrentown, in Fauquier County, are the White Sulphur Springs. Fifty miles west of Lynchburg are the Colyer's White and Black Sulphur Springs, and in the County of Mecklenburg, near the town of Clarkville, are the sulphureous saline Buffalo Springs.

In Kentucky we find the celebrated "Blue Lick Sulphur Springs," also the Harrodsburg, the Rochester, and the Olympian. Of the springs of the Southern States we can only allude to the thermal ones of Buncombe, North Carolina, (94° to 104° F.,) and those of Washita, in Arkansas, (145° to 200° F.)

Among the mineral springs of the West proper, a knowledge is opened to us of an attractive spot, with an effective mineral spring, called the "Ohio White Sulphur," on the banks of the Scioto River, in Delaware

County, eighteen miles from Columbus. Improvements and decorations of the grounds, and the construction of houses on a large scale, with the adjuncts of baths of various kinds, have been recently made by the liberal proprietor, Mr. A. Wilson. Just such a spot was wanted on the great route of travel between the East and the West, where people could meet from those opposite parts of the Union, for health and pleasure, and, it may be, as a middle ground for the easy adjustment of business matters, relieved from the dryness of detail and association in store and warehouse.

Quite a useful feature in Dr. Moorman's volume is a map and synopsis of the different routes and distances from the Atlantic seaboard to the Springs south and west of the Potomac. A colored plan of the grounds around the White Sulphur Springs is also given.

In conclusion, we can have no hesitation in regarding this work as one filled with instructive observations and advice, which both physicians and invalids may turn to good account. It is a Manual of the Virginia Springs, with which a visitor to any one of them can hardly dispense, and the perusal of which, while guiding the medical adviser in the course he should direct his patient, will also save the latter himself from hazardous, and not seldom dangerous and empirical experiments, and teach him that while it is in his own power to ward off diseases from himself, he must leave to the specially instructed and experienced the task of curing them.

The scope and prominent heads of the subjects of Dr. Bell's treatise on Baths may be pretty well understood from the title-page. The observation made in the preface of the first edition of this work applies, we believe, to the literature of the subject at the present time. It is, that until the appearance of Dr. Bell's work on Baths and Mineral Waters, in 1831, there was no one in the English language in which the different kinds of baths, cold, warm, hot, vapor, and sea, were severally considered, and their resemblances and contrasts, and their successive and alternate uses, pointed out. "Each kind of bath was considered too much in itself, and as a consequence, without its due relation to the others." Of the manner in which the author has handled the various topics successively brought up for examination, we are the less required to speak on the present occasion, after the unstinted praises lavished on the first edition of this treatise, on both sides of the Atlantic.* It commends itself to all classes of readers, both for its giving the history of bathing among the nations of antiquity, as well as among those in nearly all parts of the world at the present time, and for the connected views which it offers of the dietetic and medicinal uses of water. It displays to the reader a wide range, from the extent and magnificence of the Roman baths to the extemporized vapor bath of the American Indian, made of wicker-work covered at the top by skins. Ten chapters are taken up with details of the "Watery Regimen," in what relates to the internal use of water in health and in disease, as gathered from the ancient writers, and from the Arabian, Spanish, Italian, English, French, and German ones. Among the English writers on the watery regimen more particularly quoted, are Floyer and Baynard. The different kinds of water are described, and the means of purifying that which is bad is given. Hydropathy in its rational features takes up three chapters. After this we find treated, in regular succession, the hygienic and therapeutical operation of Cold and Sea Bathing, the latter of which is the subject of four chapters. To these succeed five others on Warm Bathing, and two on the Hot Bath. Six chapters are appropriated to Vapor Baths, including the dry and the moist, simple and medicated. Pulmonary Atmiatry, including the inhalation of artificial atmospheres and iodine inhalations, also those of ether and chloroform, receives a share of notice. Under the head of Medicated Baths we noticed those of Mineral Springs as the chief ones, then Mud Baths, Iodine and Chlorine ones, and those of the Mineral Acids, and of Compressed Air. A notice of a Common Air Bath closes the last or fifty-sixth chapter of the volume.

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* "The work of Dr. Bell is the most complete monograph, we do not hesitate to say on the subject, that has ever issued from the press, and should find a place, as a work of reference, in the library of every practitioner."—*British and Foreign Medico-Chirurgical Review*, April, 1851.

After no little experience and observation directed to the subject, we are free to say, that in no division of the Materia Medica is there such a want of knowledge, and such a manifestation of empiricism by physicians generally, as in the case of the different kinds of bath. Half the time, the tepid, warm, and hot baths are spoken of as warm, and quite commonly the hot is confounded with the warm, a mistake equivalent to that of telling a patient to drink rectified spirits instead of Madeira or Sherry wine. The perusal of a work like the present one would prevent these discreditable exhibitions of ignorance in members of a profession called learned, and be the means of preventing much *mala praxis* on the part of the physician, and of a saving of life on the part of the infirm and the sick.

ART. IV.—*A Treatise on Diseases of the Air-Passages: comprising an Inquiry into the History, Pathology, Causes, and Treatment of those Affections of the Throat called Bronchitis, Chronic Laryngitis, Clergyman's Sore-Throat, etc. etc.* By HORACE GREEN, M.D., LL.D., President of the Faculty, and Emeritus Professor of the Theory and

Practice of Medicine in the New York Medical College, etc. Fourth Edition, revised and enlarged, with an Appendix. 8vo., pp. 348. New York: Wiley & Halsted. 1858.

IN 1816, in a work entitled *Surgical Observations; being a Quarterly Report of Cases in Surgery,* Sir Charles Bell reported several cases of disease of the respiratory passages, which were successfully treated by topical applications. One of these cases was that of a young woman whose glottis was extensively ulcerated. When Sir Charles first saw her, she was sitting up in bed, breathing with a "harsh, sawing sound;" her dyspnœa was so great as to threaten suffocation, and she spoke with difficulty and in whispers. "Having ascertained," writes Bell, "by putting my finger over the root of the tongue into the glottis, that it was rough and irregular with ulceration, I proposed to touch the surface with the *argentum nitratum.* It was considered hazardous, but something was necessary, and I was confident that the application would allay irritation. I made a small pad of lint, and attached it to the ring of a catheter-wire, and bent the wire so as to pass over the root of the tongue and epiglottis; I dipped the lint in a solution of twenty grains of the caustic to half an ounce of water, and touched the glottis with it in this manner. With the fingers of my left hand I pressed down the tongue, and stretched the forefinger over the epiglottis; then, directing the wire along my finger, I removed the point of the finger from the glottis, and introduced the pad of lint into the opening, and pressed it with my finger. On withdrawing the lint, instead of coughing, she began to speak more audibly than usual, and had neither cough nor spasm from this rough operation. I repeated the application four times, and her breathing was sensibly better when I left her." These applications were continued for many days, and the patient finally restored to health.

In 1837, Trousseau and Belloc prescribed and employed topical medications in chronic diseases of the larynx. Their work was translated into English by Dr. Warder, of Cincinnati, in 1839. They used solutions of nitrate of silver, corrosive sublimate, sulphate of copper, and nitrate of mercury. Of all these, however, they preferred the nitrate of silver, on account of the efficacy and rapidity of its action. The solution which they found most efficacious in the treatment of laryngeal disease, consisted of two drachms of the nitrate to an ounce, or, sometimes, to a half ounce of distilled water. This solution was applied to the epiglottis and upper part of the larynx, sometimes by means of a small, round piece of sponge attached to the bent end of a whalebone rod, and sometimes by employing a small silver syringe, having a long curved tube. This instrument being filled to one-fourth of its capacity, was carried beyond the epiglottis, and the solution forcibly discharged into the opening of the larynx.

In 1838, Dr. Johnson, the editor of the *Medico-Chirurgical Review*, suggested to Dr. Horace Green, who was at that time in London, the propriety and probable utility of making applications below the epiglottis in the treatment of chronic laryngeal disease. This suggestion was successfully put into execution by Dr. Green upon his return home to New York. In September, 1840, he brought this subject before the New York Medical and Surgical Society, and reported fifteen cases of laryngeal and bronchial disease successfully treated by the direct application of nitrate of silver solutions to the lining membrane of the larynx. Such a degree of skepticism on this subject was manifested at the time by a large proportion of the members, that, for many years, he refrained from bringing the matter again before the society. At length the subject was presented a second time to the society, by some of its members, who had themselves succeeded in applying remedial agents to the mucous membrane of the laryngeal cavity. But a majority of the members being still in doubt upon the subject, a committee was appointed to inquire more fully "into the practicability of making these topical applications to the surfaces of the larynx." The committee reported favorably; but the skeptics still asserted the impossibility of introducing a probang into the larynx. A fierce controversy ensued. Dr. Green attempted, in vain, to convince the doubters, by reminding them that coins and other foreign bodies are occasionally introduced into the larynx by accident; that Dessault long ago proposed the introduction of an elastic tube into the trachea, as a substitute for the operation of bronchotomy, in cases of suffocation arising from certain causes; that Ryland, in his work on *Diseases and Injuries of the Larynx and Trachea*, declares that a tube guided by a scientific hand could readily be made to pass into the trachea without irritation and without convulsive spasm; and, finally, that in several instances, when Baron Larrey passed a stomach-tube into the larynx instead of the œsophagus, the mistake was not discovered by any particular sensation about the glottis. Neither would they be convinced when our author demonstrated to them upon some of his patients the practicability of the operation; but, on the contrary, becoming more skeptical than ever, they made vigorous efforts to extinguish the obnoxious Dr. Green and his offensive probangs. Happily, persecution sooner or later arrests attention and raises up adherents for the persecuted. So it came to pass that the medical fraternity of New York split into two great factions, the *Probangers* and the *Anti-probangers.* Amid the incessant skirmishing of these Galenical Guelphs and Ghibellines, the undismayed and unextinguishable Dr. Green wielded his probangs more vigorously than ever.

Larynx after larynx was taken by surprise, trachea after trachea was invaded, and bronchial tubes shrank and grew white in the presence of the restless and resistless caustic sponge, until at last our author succeeded, in the teeth of all opposition, in establishing a bold and ingenious practice, "which, if judiciously employed," says Professor Bennett, of Edinburgh, "may form a new era in the treatment of pulmonary diseases."

From the *Appendix* to the present edition of the volume under consideration, we learn that since the publication of the first edition in 1846, many important treatises on the local treatment of laryngeal disease have been published in Europe. In 1848 appeared a work entitled *Dysphonia Clericorum, or Clergyman's Sore-Throat; its Pathology and Treatment.* By Dr. James Mackness, of London. Two years later, Dr. John Hastings, of the same city, published a *Treatise on Diseases of the Larynx and Trachea,* and their Treatment by the Local Application of Caustics.

"Dr. Hastings expresses great confidence in the use of the nitrate of silver as a local remedy in the treatment of these affections; and he also details many cases of much interest, in which topical medication proved effectual in arresting the disease after other measures had failed. Under the head of 'Follicular Laryngitis,' Dr. Hastings alludes to a pathological condition of the larynx and trachea, which, as an independent affection, is very generally overlooked by the profession, or is considered the sequel—not, as it often is, the antecedent of tuberculosis. 'I am satisfied,' says Dr. Hastings, 'that cases presenting the morbid appearances in the pharynx and arch of the fauces just described, form but a small proportion of those denominated follicular laryngitis.' * * *

"'I have repeatedly met with cases in which the disease was confined to those parts and the back of the velum, where nothing more was required than to carry the solution of the nitrate of silver behind the uvula into the posterior nares, and over the pharynx and fauces, in order to remove a very troublesome cough; while in others, and by far the greater number, the disease exists in the larynx and trachea, the fauces and the pharynx at the same time presenting a healthy appearance.

"'Such cases are, generally, most puzzling to the practitioner. The patient is troubled with cough, the expectoration is muco-purulent, occasionally streaked with blood, to a considerable amount; pains are felt in the chest below the clavicles, he wastes a little, or he may not lose flesh. His chest is examined again and again, but no disease can be discovered; his mouth and throat are inspected without anything being found there to account for the symptoms; at length the disease is regarded as an obscure case of phthisis; he gets treated with sedatives, expectorants and cod-liver oil, until the ensuing winter, when all his former symptoms return in an aggravated degree, while as the warm season comes on they improve.'

"'Much pain and suffering might be spared in these cases were a stethoscopic examination of the windpipe resorted to, which in most cases would point out the nature, situation, and extent of the disease; and the practitioner would have

> that satisfaction in treating the case which an imperfect knowledge or an entire ignorance of it can never give.'
>
> "Such cases are reported by Dr. Hastings as having been successfully treated by the repeated application of the sponge, saturated with a solution of the nitrate of silver, and which was 'carried down the windpipe,' he says, 'as low as the bifurcation of the bronchi.'"

In a paper read before the Edinburgh Medico-Chirurgical Society, by Dr. John Scott, one of the oldest and most distinguished physicians of Edinburgh, and afterwards published in the *Monthly Journal of Medical Science* for 1850, many interesting cases of laryngeal diseases, successfully treated by topical medication, are recorded. In 1851, M. Joubert, of France, published, in the *Recueil des Travaux de la Société Médicale de l'Indre et Loire*, a memoir on the local method of treating hooping-cough.

In 1852, Dr. Richard Payne Cotton, one of the physicians of the Brompton Hospital, published a work *On the Nature, Symptoms, and Treatment of Consumption.* After stating that he formerly disbelieved in the practicability and propriety of applying medicinal substances to the mucous membrane of the respiratory passages, Dr. Cotton says:—

> "'I should here remark, that my own views upon this subject differ from those I formerly held and have even expressed; and that I owe this change to the kindness of Dr. Horace Green, of New York, the justly celebrated advocate of this treatment, who, during a recent visit to our metropolis, convinced myself and others not only of the possibility, but of the safety and usefulness of the practice.
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> "'I had long been in the habit of using a solution of nitrate of silver to the pharynx and upper surface of the epiglottis, by means of a soft brush, in all the early cases both of pharyngeal and laryngeal complication; and had frequently witnessed its good effects, not only upon the part to which it was immediately applied, but upon the laryngeal structures also, attributing it in the latter case to an action excited in the upper respiratory passages from continuity. But I had never ventured to apply anything directly to the larynx itself; not from misgiving as to its effects, but from apprehensions of its danger. For some months past, however, I have done so extensively in cases of chronic laryngitis, whether idiopathic or tubercular, and very frequently with marked success.
>
> "'At the commencement of the laryngeal symptoms, a solution of the crystals of nitrate of silver, varying in strength from ten grains to half a drachm to the ounce of distilled water, passed, by means of the instrument recommended by Dr. Green, into the opening of the larynx, is often productive of great relief. I have known the voice regained, the irritable cough removed, and the tenderness and difficulty of swallowing dissipated entirely by it; indeed, I think we might almost speak of its *curative* effects, so far, at least, as the larynx is concerned, in some very early cases.'"

The next work in the chronological order, is that of Dr. S. Scott Alison, of Edinburgh, *On the Medication of the Larynx and Trachea*, published in 1853.

> "'I had so frequently found,' says Dr. A., 'in the treatment of local disease and local complications, that many remedies were far more efficacious when applied immediately to the part affected or to its vicinity, than at a distance, that I was glad to learn that a sponge, loaded with the solution of the nitrate of silver, and affixed to a probang, could, not only without injury, but with manifest advantage, be passed through the glottis and the larynx down into the trachea.'
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> "In acute inflammation of the glottis, Dr. Alison has hesitated to apply the solution, lest 'the presence of the stimulant on the parts suffering from such attacks,' might aggravate the disease; but in chronic inflammations of the larynx, 'and of the upper portion of the trachea, the solution of the nitrate of silver, he observes, has in my hands, as in others, been very useful in bringing the disease to a conclusion; and where that has not been accomplished by reason of its dependence upon incurable disease of the lungs, it has almost invariably afforded very considerable relief, by rendering the cough less violent and frequent, and removing much of the tickling and uneasy sensations at the upper portion of the larynx. * * * 'In some cases of disease of the larynx and trachea,' he continues, 'in which the symptoms inclined to the suspicion that ulceration existed, the same local application of a solution of the nitrate of silver has been very useful.'"

Dr. Alison also recommends the employment of nitrate of silver in the treatment of the cough and irritation of the glottis, caused by the presence of tubercles in the lungs. He assures us that much comfort and benefit have been derived from its use, both when the tubercles have been crude and when they have become softened. The presence of undoubted cavities in the lungs, the breaking down of tubercles, and the expulsion of their débris, have not prevented this application from being decidedly useful.

In the same year, (1853,) Dr. J. Hughes Bennett, of Edinburgh, published his well-known *Treatise on the Pathology and Treatment of Pulmonary Tuberculosis and on the Local Medication of Pharyngeal and Laryngeal Diseases.* In this treatise, Professor Bennett declares that if the probang be properly prepared and the operation well performed, the sponge, saturated with the solution of nitrate of silver, may be rapidly thrust through the rima into the larynx, and frequently into the trachea. "I am persuaded," he says, "that on many occasions I have passed it pretty deep into the trachea, not only from the length of the probang, which has disappeared, but also from the sensations of the patient." In November, 1857, Dr. Bennett contributed to the *Edinburgh Medical Journal* a short article on *Injections of the Bronchi in Pulmonary Diseases.* In that article he says :—

"I have confirmed the statements made by Dr. Horace Green. I have introduced the catheter publicly in the clinical wards of the Royal Infirmary, in seven patients. Of these, five were affected with phthisis in various stages—one had chronic laryngitis, with bronchitis, and one chronic bronchitis, with severe paroxyms of asthma. In several other cases in which I attempted to pass the tube, it was found to be impossible—in some because the epiglottis could not be fairly exposed, and in others on account of the irritability of the fauces and too ready irritation of cough from pressure of the spatula.

"My experience of this treatment is as yet too limited to permit my saying anything of its permanent effects. In the case of bronchitis with asthma—a female, aged 24—I have now injected the lungs eleven times, at first throwing in ʒij of a solution of nitrate of silver, of the strength of ʒss of the crystallized salt to ℥j of distilled water, and latterly I have thrown in ℥ss of a solution of the strength of ℈ij to ℥j. She declares that no remedy has had such powerful effect in lessening the cough, diminishing the expectoration, or delaying the asthmatic paroxysms. She breathes and blows through the tube, when inserted four inches below the larynx, and I have been surprised at the circumstance of the injections not being followed by the slightest irritation whatever, but rather by a pleasant feeling of warmth in the chest, (some have experienced a sensation of coolness,) followed by ease to the cough, and a check for a time to all expectoration.

"I think it of importance that these facts should be known to the profession, as a homage justly due to the talents of a distinguished transatlantic physician, and with the view of recommending a practice which, if judiciously employed, may form a new era in the treatment of pulmonary diseases."

In the second edition of his *Clinical Lectures on the Principles and Practice of Medicine*, published in 1858, Dr. Bennett again takes occasion to speak of the great advantages to be derived from topical medication in the treatment of laryngeal diseases.

In 1854, Dr. Eben Watson put forth, at Glasgow, a work on the *Topical Medication of the Larynx in certain Diseases of the Respiratory and Vocal Organs.* To this gentleman belongs the honor of having been the first to employ local applications in the treatment of hooping-cough. His original paper on pertussis, in which he describes "a new method" of treating that disease, was read before the Medical Society of Glasgow, in 1849, and was first published in the *Edinburgh Monthly Journal* for December of that year. Five years later, after having treated many other cases by this method, Dr. Watson gives us the results of his experience in the work whose title we have just quoted. These results positively confirm the statements put forth by Dr. Green in 1846. Professor Robert B. Todd, Physician to King's College Hospital, London, has treated topically many cases of pharyngo-laryngeal and bronchial disease. In his "Clinical Lectures," recently published in the *London Medical Times and Gazette*, he recommends "the local application of a solution of nitrate of silver, (ʒss to the ℥j,) by means of a probang thrust behind the epiglottis down to the glottis," after the plan of Dr. Green. "The patient," he says, "can always tell whether the sponge enters the larynx or not, from the great irritation it excites when it passes into the glottis; and in the withdrawal of it, the operator feels a certain resistance, caused by the sponge being grasped by the muscles of the larynx, which resistance is not felt when it simply passes into the œsophagus."

In 1857, an interesting discussion, on the subject of the cauterization of the larynx and bronchi, took place in the Academy of Medicine of Paris.* A commission was appointed to investigate the subject, of which M. Trousseau was made chairman. A favorable report on the treatment of laryngeal affections by this method was made and unanimously adopted by the academy—the commission declaring that cauterization of the air-passages, in the treatment of disease, is not only practicable, but is of great utility. Finally, Professor Griesinger, of Germany, has declared himself an advocate of Dr. Green's method of treating certain diseases of the respiratory passages by topical medication.†

From this brief survey of the history and literature of this interesting subject, it will be seen that the practicability and utility of Dr. Green's method have, at length, after the lapse of nearly a quarter of a century, been sustained and verified by unquestionable medical authorities in Great Britain, France, and Germany. In our own country, on the contrary, the views of Dr. Green have gained but few adherents. In the city of his residence these views are even violently opposed by some of the oldest and most influential physicians, as the recent proceedings of the New York Academy of Medicine, relative to the death of Mr. Whitney, amply testify. We are neither acquainted with, nor have we ever seen any of the parties concerned in the disgraceful transaction to which we allude; we therefore speak disinterestedly when we say that, having read attentively the reports of these proceedings as published in the *American Medical Monthly* for February, 1859, and in other journals, we are constrained, from the evidence therein set forth, to regard the arraignment of Dr. Green before the Academy as an undignified, impolitic, and badly managed attempt to cast obloquy upon him, and to bring into disrepute his views concerning certain respiratory diseases, and the plan of treatment based upon these views.

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* Gazette Médicale de Paris and L'Union Médicale de Paris, for August and September, 1857.

† Deutsche Klinik, quoted in the Gazette Hebdomadaire for May, 1858.

ART. V.—*Sur une Fonction peu connue du Pancréas; la Digestion des Aliments Azotés.* Par LUCIEN CORVISART, M.D. 8vo., pp. 123. Victor Masson: Paris, 1857–58.

Upon a Function of the Pancreas but little known; the Digestion of Nitrogenous Food. By LUCIEN CORVISART.

ACCORDING to the best treatises upon physiology, the functions of the pancreas are limited to the digestion of the non-nitrogenized, or calorifacient food. Upon the starch of vegetable aliments the pancreatic juice acts in a similar manner to the saliva, transforming it first into sugar, and ultimately into lactic acid; upon the fats of animal food it exerts a peculiar emulsyfying power, reducing them to a state of molecular division, which, if it does not put them in a condition to be taken up by the absorbents, is an important step in their digestion. According to the author of the treatise now under notice, the functions of the pancreas are not thus limited to the digestion of non-nitrogenized food; the new function heretofore little known, which he maintains this organ possesses, is the digestion of albuminous food in all its varieties. He does not maintain, however, that the views heretofore held in regard to the action of the gastric juice upon this class of food are incorrect, nor attempt, in showing that these aliments undergo more change in the intestines than has heretofore been believed, to take from the stomach any of the functions now attributed to it. He looks upon the action of the pancreatic juice in the digestion of nitrogenized food rather as supplemental to that of the stomach, it having no effect upon the peptones produced in the stomach, but acting energetically upon that portion of the food which may have escaped gastric digestion, either on account of the excessive quantity taken, or from any defect in the actions of that organ.

The objects of the author have been to ascertain what are the changes induced in plastic, or tissue-making food by the pancreatic juice, and so establish the relations and differences between gastric and intestinal digestion. In pursuing his investigations, he has not been unmindful of the difficulties which attend the subject; these are far greater than those which have been overcome in ascertaining the functions of the stomach; gastric fistulæ afford a ready means for the introduction of any article of food into the stomach in a state of purity; it can remain there unacted upon by anything except the gastric juice, and may be removed at will. But no sooner does the food pass from the stomach, than it meets with the bile and the secretion from the glands of the intestine, as well as the pancreatic juice, the presence of all interfering with our observation of the action of any one of them; moreover, the matters poured into the intestine from the stomach are far from being simple in character. They consist of three different classes, even after the most careful selection of aliment: First, digested food, the product of the action of gastric juice upon the ingesta; second, undigested food, that which has escaped any change in the stomach; third, that portion of the gastric juice which has not acted upon the food and remains pure, or nearly so. The author has also kept in view the fact that *digestion* is something more than mere *solution*, and the product of the experiments made has been carefully tested in every instance and proved to be not only dissolved, but changed. These experiments were of two kinds: upon animals, by ligating the duodenum at its upper and lower extremity, and placing within it various alimentary substances, and by submitting the same articles to artificial digestion with the pancreatic juice, or with a mixture of the pancreatic glands of animals and water. He made use of the principal nitrogenized articles of food in a state of the greatest possible purity; albumen, cooked and raw, fibrin, cellular tissue, muscular tissue, caseine, and gelatine were each made the subject of separate investigations. The greater part of the work is taken up with the relation of these different experiments; we will give here only the most important and most practical of the conclusions at which the author has arrived, referring our readers to the work itself for further information upon details:—

1. The azotized aliments are digested by the stomach; they are also digested by the (secretion from the) pancreas.

2. The pancreas is a supplementary organ to the stomach; its action being added to that of the stomach after copious repasts.

3. The nature of the two digestions is similar in so far as the food acted upon by each of them is transformed into assimilable substances exactly similar, (albuminose or peptone.)

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5. When azotized aliment has completely undergone gastric digestion, the pancreatic secretion does not exercise any further influence upon it; does not transfer it into another peptone.

6. It is upon that portion of albuminoid substances which has quitted the stomach without being transformed into albuminose that the pancreatic secretion acts.

7. In certain cases the action of the pancreas can equal that of the stomach.

8. If the quantity of digestive fluids is alone considered, the stomach appears far the more powerful, for the gastric juice is ten times more abundant than the pancreatic; but, on the other hand, the pancreatic juice is ten times richer in ferment, (pancreation.)

9. If the action of the gastric juice is aided by the prolonged stay of the aliment and an intimate mixture with it, the pancreatic secretion enjoys the privilege of acting equally in an alkaline, acid, or neutral state, and three times more rapidly.

10. Everything is arranged in the duodenum so that the pancreatic juice may act as soon as it meets the aliment; in the stomach so that a great portion of the food may be transferred into peptones, and further that the other portion may at least be prepared to undergo pancreatic digestion rapidly.

11. This preparation, which varies with the quality and quantity of the food, and of the gastric juice, etc. etc., consists sometimes in simple imbibition, sometimes in extreme division, sometimes in solution,—the pancreatic digestion, being necessarily rapid, finds in the preparation great assistance. The stomach in this respect playing the same *rôle* which is filled by the teeth in regard to gastric digestion.

12. However, the pancreatic juice is capable of digesting aliments which have not undergone this preparation. Thus, albuminous matters, in a crude state, placed directly in the duodenum, are there completely and perfectly digested; the process is only somewhat slower. The pancreatic juice does not need the addition of the bile or the intestinal secretion to give it digestive powers. Practiced artificially in the laboratory with the juice, or with pancreatine, the digestion of azotized aliments takes place the same as in the duodenum itself.

13. When the gastric or pancreatic juices are separated and act successively, each exerts its power fully, and the quantity of albuminose produced can thus be doubled.

14. But it is remarkable that if these two digestive ferments meet in a state of purity, the two digestions do not proceed so freely; instead of the digested product being doubled by this union, it may be reduced to nothing, for in these unnatural circumstances the pepsine and the pancreatine destroy each other's power.

15. In the normal state, nature prevents this conflict by three means: 1. The pylorus, which separates the two ferments. 2. In gastric digestion the pepsine is exhausted and neutralized in forming the pepsine. 3. The bile, as shown by Pappenheim, neutralizes the activity of (that portion of) the gastric ferment, (which has not acted upon the aliment.)

16. The bile does not precipitate the peptone produced by the stomach so that digestion is destroyed and must recommence; it is the bile itself which is precipitated by the acid of the gastric secretion or of the chyme.

17. The kind of azotized aliment used has much influence upon the quantity of peptone which the two digestions can successively produce. Thus, while musculine and caseine furnish nearly thirty grammes of perfect peptone, an equal quantity of albumen or of gelatinous tissues furnish scarcely fifteen grammes.

18. Both digestions, pancreatic as well as gastric, destroy the characteristic properties of the diverse albuminoid substances; they liquefy the insoluble, take from albumen its coagulability, from caseine the property of forming curds, from gelatine that of forming jelly, and from musculine that of giving a precipitate with chloride of sodium; finally, they transform them all into albuminose or peptones.

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21. The peptones have for characteristics—solubility in water, acid, neuter or alkaline, which assures an easy circulation through the system; heat does not

coagulate them; the acetate of lead does not precipitate the greater part of them; they are, in general, less liable than the azotized alimentary matters to form insoluble metallic combinations.

22. The peptones form a class as well characterized as the albuminous substances; it is evident, however, that science will hereafter determine their natures far more accurately than has yet been done.

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COROLLARIES, OR PATHOLOGICAL INDUCTIONS.

(*a*) It is almost certain that there exists, as regards albuminous aliment, a duodenal dyspepsia, caused by the vitiation, the insufficiency, or the absence of the pancreatic secretion, the symptoms of which only appear after the third or fourth hour of digestion, and is accompanied with more sensation than gastric dyspepsia. In these cases of duodenal indigestion the administration of pancreatine is indicated.

(*b*) A secondary duodenal dyspepsia may arise from want of division, in the stomach, of those articles of food not transformed into peptones. Pancreatic digestion then proceeds more slowly, as does the gastric when the teeth do not properly perform their duty. This pancreatic indigestion is to be cured by appropriate treatment of the primitive gastric dyspepsia.

(*c*) Another form of secondary duodenal dyspepsia may arise from a superabundance of gastric juice, or from insufficiency of the pyloric orifice; in both these cases the gastric juice reaches the duodenum in a state of purity, and destroys the power of the pancreatic secretion.

(*d*) A third form of secondary duodenal indigestion may be caused by an insufficient quantity of bile, whereby the gastric juice which passes into the intestine is not neutralized, and the same evil effects are produced as in the two preceding cases.

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(*g*) Bile, when it reaches the stomach by the pylorus, or is administered by the mouth, destroys the activity of the gastric juice in that organ. Hence bile may be employed to obviate the evils arising from a superabundance of gastric juice.

(*h*) From equal weights of azotized aliments, and with equal digestive powers, unequal quantities of peptones are produced, according to the nature of the aliment ingested. It is clearly an error, therefore, to estimate the nutritious quality of food merely according to the amount of nitrogen it contains.

(*i*) When it is more urgent to calm the pain and avoid the revolt of the digestive organs than to sustain the muscular force, such food should be given as will dissolve most rapidly and most completely, whatever may be the quantity of peptone it will furnish.

(*j*) But when the most urgent necessity is to support the muscular strength, we should make choice of those aliments which, with equal digestive force, will furnish the greatest quantity of peptone, although they may be more slowly dissolved and digested.

(*k*) He who digests only with one organ (pancreas or stomach) is placed upon half-rations of peptone, the same as one who eats only albumen or gelatinous tissues, which furnish but half as much peptone as caseine or muscular tissue, is upon half rations, and is thus but half nourished. * * * * *

(*l*) We should avoid giving only one kind of azotized food continuously, not only because one kind alone is insufficient to repair the variety of organs in the body, but because a single kind of food, when given exclusively and continuously, after about eight days ceases to excite the secretion of gastric juice, and no longer undergoes gastric digestion.

However carefully the author may have performed his experiments, and however well convinced he may be of the truth of the propositions he has laid down, the whole ground must be gone over again by other and competent investigators, before the profession will look upon his propositions as established. We willingly bear testimony to the careful manner in which he has pursued his investigations, and nothing is apparent in his work but a sincere desire to establish the truth, although some of his views clash with those of Bernard and other eminent physiologists; at the same time, we think there is one important point omitted in his experiments, which is the exclusion of all aliment except nitrogenized. Granting that the pancreatic secretion acts as he shows it to do upon albuminous food, will it continue thus to act when non-nitrogenous aliment is also present? Does it assist in the digestion of albuminous matters at the same time it is forming an emulsion with fats, and acting upon starch? We should have preferred the work had it contained a series of experiments designed to elucidate these questions.

We have called attention to the subject of intestinal digestion as one of great interest to physiologists, and of great importance to practical physicians; it is yet far from being fully understood, and offers a fair field of labor for patient experimenters and investigators. Those who would read some new views upon the whole subject of "Food and Drink," will find a series of articles, evidently written by a master-hand, in *Littel's Living Age* of last year, republished from *Blackwood's Magazine.*

ART. VI.—*Five Essays.* By J. K. MITCHELL, M.D, etc. etc. Edited by S. WEIR MITCHELL, M.D., etc. 12mo., pp. 371. J. B. Lippincott & Co. 1859.

THIS tribute of filial piety to the memory of a distinguished father contains much that is worthy of note and preservation.

The first of the selected essays, "On the Cryptoganous Origin of Malarious and Epidemic Fevers," has been for some years before the public, attracting large consideration and comment. It is not too high praise to say of it that it is the most ingenious and able attempt that has been made at the elucidation of the difficult topic, whose obscurity has indeed bid defiance to the accumulated efforts of professional intelligence.

We think the riddle still unsolved. There are capricious incongruities in the history of this class of endemics and local epidemics which do not admit of any comfortable or satisfactory explanation in the present condition of science. We do not hesitate to affirm, however, that there is no monograph on malaria, no treatise on the etiology of that large class of maladies which we ascribe to a specific poison, referred to most vaguely under that title, which the student can peruse with more instruction, and the pathologist with more curious and exciting interest. We are very glad to see it reissued in a permanent and becoming form.

The second essay, the longest in the book, upon "Animal Magnetism, or Vital Induction," is now published for the first time. We need not assure our readers that it will abundantly reward the most careful attention devoted to its perusal. It is a great mistake to imagine that the study of such subjects can be evaded by the physician. "Nihil humanum mihi alienum puto," must be the motto of every one of us. Whatever concerns, whatever interests our clients, must be brought under our contemplation. From the earliest times, some latent power of the nature here investigated has been believed to exist, and believed not only by the vulgar and ignorant, but by the shrewdest men of the world, the most intelligent observers of facts, the most profound cultivators of science. Like many other articles of time-honored and universal faith, it has been found no easy matter to express it in any acceptable formula, to choose the proper words for a creed or dogma on which men could agree. But as to the fact that there is *something to believe*, although we cannot precisely define it, there can be no question. The January number of the *Westminster Review* contains an article on anæsthetics, evidently from an able and practical pen, in which this matter is set in a strong light, and spoken of as an undoubted verity.

Mesmerism is treated of only as an anæsthetic agent; but its potency, effectiveness, applicability, and its subjection to certain laws, are regarded as absolutely established. And indeed it is idle to deny, that when every allowance is made for delusion and collusion, error and knavery, there is still "a residuum," as some one has called it, which requires explanation, and has not yet been explained. "Imagination and imitation," says Prof. Mitchell, "cannot account for the uniformity of the mesmeric state in persons of all ages and conditions, who are totally ignorant not only of the symptoms to be produced, but of the design of the mesmerizer; nor can we, by any rational view of their causes, ascribe to anything *but a physical influence*, the effect of passes," etc. This physical influence he denominates "vital induction;" "an unexplained power, analogous to the equally inexplicable induction of the mechanicians, and the *presence* of the chemist."

It would indeed be a blind and deaf skepticism that would ignore at the present day the facts vouched for by so many individuals as matters of personal experience or observation; the statements of Agassiz, Esdaile, Dugas; the experiments of Mitchell, Mayo, and Elliottson; the recorded opinions of La Place, Cabanis, De Jussieu, and Cuvier.

There was no little courage required for the investigation entered into and so skillfully conducted by Prof. Mitchell. Our profession is exquisitely sensitive—and long may it continue so—as to contact with the numerous forms of charlatanism, even for the purposes of detection and exposure; and there never was, perhaps, any topic of human attention so thoroughly imbued with the very spirit of imposture as this. Its very name is painfully and palpably characteristic; and in its progress it seemed to put on darker and darker colors at every step. But Prof. Mitchell feared nothing; and his acuteness was equal to his courage. The inquiry could not possibly have fallen into more competent hands; and the result, as here recorded, justified fully all the expectations of his most sanguine friends.

Of the two purely scientific papers, "On the Penetrativeness of Fluids," and "On the Penetration of Gases," it is only proper to remark, that they were well-timed, somewhat in advance of the philosophy of the day, which they aided to lead, and to the progress of which they largely and impressively contributed. The reputation accruing from them was great, and is destined to last.

The concluding paper, "On a New Practice in Acute and Chronic Rheumatism," was happily chosen by the editor as a fair specimen of the numerous and valuable practical suggestions for which the medical profession is indebted to Professor Mitchell.

The volume before us affords abundant proofs of his possession of a rare combination of intellectual qualities. Genius of a high order, a quick perceptive capacity, a most prompt apprehension and comparison, were mingled in him with profound and cautious reflection, and a plain, simple, and practical adaptation of means to ends; all which go to constitute the highest sagacity of the physician, and the most extended usefulness of the man of administrative talent.

The work is gotten up in the admirable style with which the enterprising and liberal publishers, J. B. Lippincott & Co., have made us familiar, and for which they are justly celebrated. It must hereafter form a portion of the library, not only of each member of the widely-distributed body of alumni of the Jefferson Medical College, to whom it is gracefully and feelingly dedicated, but to every American physician.

Original Communications.

ART. I.—*Contributions to Obstetric Jurisprudence.* By HORATIO R. STORER, M.D., of Boston.

CRIMINAL ABORTION. (CONTINUED.)

VI. ITS INNOCENT ABETTORS.

WE have referred to an apparent disregard of fœtal life, obtaining in the medical profession, as a prominent cause of the prevalence of criminal abortion. We now proceed to show that the opinion is not unfounded.

Premature labor, or obstetric abortion, may be justifiably induced by the physician for one of two reasons; either to save the life of the mother or that of her child. In each case it must be, absolutely and only, to save a life.

Performed for the child's sake, it is evident that the operation can be only available during the last three months of pregnancy, for then only can the fœtus with any degree of probability be considered viable. We grant that there are a few cases on record where, born during the sixth month and even in the fifth, the child has survived; but it is equally certain, despite the popular notion concerning the mortality of eighth-month children, that the later the operation can be safely delayed, the better the chance for the infant's life.

The rules for the induction of premature labor must, of course, vary for different cases. In this early stage of the inquiry, it is perhaps impossible to state them precisely, but they may still be approximately arrived at.

1. The operation, performed for the child's sake, is but seldom required; and in general,

(2.) only after the commencement of the seventh month of pregnancy.

3. It must be clearly indicated; and

(4.) must be delayed as long as is consistent with the child's safety.

5. Its means must be those which are most efficient, and safest for the child.

We have already stated that the induction of abortion before the seventh month, undertaken for the child's sake, must be generally useless; and therefore, as attended with some degree of danger to the mother, generally unjustifiable. As the profession are nearly united on this point, its further discussion is here unnecessary.

We have asserted that the cases where prematurely induced labor is required for the child, are comparatively rare. We now add that while in some respects they are more frequent, in others they are less so than is generally supposed. To necessitate it, there must be disease or deformity on the part of the mother, or disease on the part of the fœtus or its appendages.

It is most frequently performed to avoid the alternative of craniotomy, the necessity of which, unless extreme, can manifestly only be known with certainty, before the expiration of pregnancy, from the experience of past labors. But here too much caution cannot be exercised; the rules of the books and of accepted authorities are not to be blindly followed.

Craniotomy at the full time is still too frequently performed:

Where it has been suggested by the character of a previous labor, children are often, or might be, born living;

Where it seems indicated by direct exploration, as ruled even by recent writers, children are sometimes, or might be, born living;

Where it was formerly thought absolutely essential, the progress of obstetric science has now rendered it often unnecessary.

It is proper that we consider these points, for they bear directly on the question at issue concerning criminal abortion.

It is known that the sex of children exercises an appreciable influence upon the result of labors at the full time, as regards the possibility of their passing alive, unaided or at all, through the pelvis, and as regards the length of the labor, which also progressively endangers the life of the mother and their own; the average female fœtus, in cases at all difficult, having the advantage over the male by its inferiority in size, especially important in the cranial diameters. It is unnecessary for us to do more than refer to the facts by which these assumptions are proved.* Where, therefore, craniotomy has been found necessary in a former labor, the child then being male, in another labor a female fœtus may often pass uninjured. However this argument may be lessened in value by the impossibility of previously ascertaining the sex, it is strengthened in the doctrine of chances, by the number of the labor and the sex of the former children; and by the fact that first labors are generally most difficult, whatever the sex of the child.

Furthermore, cases will suggest themselves to most practitioners of experience, in which from difference in the character of the labor or without apparent reason, children are born living at the full time, males, of large size, and presenting by the vertex, where craniotomy had previously, perhaps repeatedly, been performed. An instance of this has occurred to the writer, where the patient had been advised to early abortions from alleged physical incapacity of ever bearing living children; he delivered her, without difficulty, of a large-sized and living boy, at the full time.

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* SIMPSON, Obst. Works, i. pp. 352, 404.

Again, it may happen that in labor at the full period, craniotomy may seem decidedly indicated and advisable, but for one reason or another may not be performed, and yet the child, unaided, be born living. The writer's experience furnishes him with two illustrations of this class: one of them occurred in 1851, the patient his own, Drs. S. sen., and C., in consultation; the other was seen at Edinburgh, in 1854, in the practice of his friend, Dr. G. W. In both cases, permission was refused to operative procedures, the patients being Catholic, and the physicians unable conscientiously to pronounce the fœtus already dead, while the possibility of intra-uterine baptism was not recollected; in both instances the children were born living, and without instrumental aid.

In other cases, where from deformity previously diagnosticated, craniotomy is pronounced necessary if the patient should go her full time, she may do so, the labor be unassisted, and the child yet escape with its life. I instance a remarkable case for some time under my own charge at the Boston Lying-in Hospital, delivered by one of my colleagues, Dr. Dupee, and subsequently reported by Dr. Read.* The pelvis was here equably contracted, and to a great degree, but from some difference of opinion, partly as regarded the justifiability of premature labor as compared with craniotomy, the patient was allowed to go her full time. Both mother and child did well.

Finally, by turning, the use of the long forceps and of anæsthesia, children are now constantly saved, where formerly craniotomy and their consequent destruction would have been absolutely indicated. These processes, with the introduction of each of which as an alternative a single name is imperishably connected, are now successfully employed by very many of the profession;† they have each of them saved to the writer the disagreeable necessity of fœtal destruction. Where, however, one life is thus preserved, there are still multitudes unnecessarily, and, therefore, unjustifiably, sacrificed.

The comparative frequency of craniotomy in the different countries of Europe is in this connection worth noticing.

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* Boston Med. and Surg. Journal, January, 1857, p. 462.

† The immorality of craniotomy, where delivery can be effected by any other method, is gradually becoming acknowledged in Great Britain. A late discussion on this subject, at the Obstetric Society of London, is reported in the Medical Times and Gazette for February, 1859.

The operation is performed, in

Germany	once in every		1944	labors;
Paris	"	"	1628	labors;
France, at large	"	"	1200	labors;
Vienna	"	"	688	labors;
England	"	"	220	labors;
Ireland, formerly	"	"	128	labors;*
" at present, Dublin Hospital, 1854,	"	"	105·7	labors.†

The remarkable difference between the practice on the continent and in England, so suggestive to us in this country, is undoubtedly owing to the fact that in Catholic States greater value is attached to the life of the child than "in Protestant States, as Britain, where the child is always sacrificed to save the mother."‡ The immense excess of embryotomy cases in Catholic Dublin furnishes no exception to this rule, drawn as they are from hospital practice under Protestant control.

So far proof by deduction. In many cases involving the question of craniotomy, that operation is not required; in some of them, not even the induction of premature labor.

Two classes of cases remain, each affording more direct evidence; those where craniotomy being absolutely indicated if the patient were allowed to go her full time, that operation is, and those where it is not performed.

Craniotomy, being necessarily fatal to the fœtus, is indicated only to save the mother's life; to be avoided when any other alternative giving the fœtus a chance of life, and not more than equally hazardous to the mother, can be resorted to. Especially is this the case when it is compared with the induction of premature labor, attended as is the latter, despite a certain amount of danger of its own, with great probability of saving the child, and with decidedly lessened risk to the mother; for craniotomy not merely requires the use of murderous instruments, dangerous to all tissues they may approach or be in contact with, but the operation is usually, though often very improperly, delayed till late in labor, and therefore till the mother's chances of recovery have been proportionally lessened. Premature labor, on the other hand, though of course involving some risk to the child, is not necessarily fatal to it; nor is it usually so, when properly performed. That there is a choice in this respect between the means employed, will hereafter be shown.

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* CLAY, Obstetric Surgery, p. 68.

† SINCLAIR and JOHNSTON, Practical Midwifery, 1858. 130 cases of craniotomy in 13,748 labors.

‡ CLAY, Loc. cit., p. 69.

Craniotomy, when absolutely indicated at the close of pregnancy, must be for one of two reasons: that the fœtus cannot pass through the pelvis at the full time alive, though it may do so unmutilated, the operation being performed to save the mother the greater risks of protracted labor; or that it cannot pass at the full time unmutilated, even when dead. We defer the consideration of another supposable instance, where the fœtus in the outset of its viability may pass, but not alive, for this pertains to the consideration of the mother's safety alone, no alternative availing for the child. In the other cases, if the necessity could be learned in season, from the previous history of the patient or by pelvic exploration, labor should most certainly be prematurely induced, as affording some positive chance of life to the child, and as less dangerous to the mother. It were here worse than foolish, if not criminal, blindly to imitate nature, when, her course being obstructed, she would kill the child.

I have alluded for a double reason to cases, fortunately few, where craniotomy, and much more decidedly premature labor being indicated, the practitioner decides from the outset to perform neither, to give his patient or her child no aid. Such conduct is as cruel and wicked as it is unprofessional, and were not instances occasionally reported, its existence could hardly be believed. We acknowledge with Blundell the evils of meddlesome midwifery, but there are extremes to all things; certainly to the powers of nature and the limits of justifiable delay.

I am aware that I have referred to a reported case, which might in this connection be quoted against the opinion now expressed; but even by its exceptions do we prove the rule. Where chances are so greatly against both mother and child as in these cases if left unaided, it would be the office of the physician, were there no better procedure, by craniotomy to save the one;* but at the present day it is no less plainly his duty, where possible, to anticipate labor, and thus save both. I have elsewhere discussed this question at some length,† and can only repeat, as is indeed allowed by Churchill,‡ that this is no matter on which to select one's words; the deliberately sacrificing an unborn, but still living child, in cases where statistics go to prove that the adoption of another mode of delivery, nothing counter-indicating, would give that child a good chance of successful birth, is nothing short of *wilful murder*, no matter by what schools or by what eminent men it may be sanctioned, and it should be branded as such by the profession.

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* The subject of justifiable craniotomy has of late been ably though controversially discussed by an anonymous writer (Dublin Review, April and October, 1858,) and Dr. Churchill (Dublin Quarterly Journal of Medical Science, August and November, of the same year.) Care must be taken, lest in assenting to the decided and imperative necessity of the operation in certain cases, and by a natural professional sympathy, too great frequency is not allowed to this most horrible and appalling of all the operations to which as physicians we can ever be called.

† Review of CLAY'S Obstetric Surgery; Boston Med. and Surg. Journal, November, 1856, p. 283.

‡ Theory and Practice of Midwifery, p. 348.

But, undertaken for the child's sake, not merely should premature labor be resorted to for the purpose of preventing craniotomy, but often in cases of incurable disease, acute and chronic, of the mother, where it is evident that she must inevitably, or even probably, perish before the full period of pregnancy has been attained. Instances of such acute disease will readily suggest themselves. The question here is merely between the operation under consideration, the Cæsarean section, and doing nothing. The last, suppose the fœtus viable and to be still living, would in many instances be decidedly unprofessional and unjustifiable. Cæsarean section after the mother's death is comparatively unsuccessful; and before it, is so much more severe and in all probability so much more quickly fatal, that the other should be preferred, unless death be already close at hand.

Instances of chronic incurable disease necessitating the induction of premature labor, may not so readily occur to the mind. The shock of an abortion being frequently greater to the maternal system than that of labor at the full time, it is evident that this rule cannot be universally applied. It cannot in every case of thoracic disease, of the heart, for example, unless its own peculiar symptoms become so aggravated from progressing pregnancy as to render probable earlier decease of the mother, the operation then being performed partly on her account; not so much to save her life as to delay a little her death. But there are other and extreme cases, as cancer of the lower segment of the uterus, or indeed of its fundus, which may have been diagnosticated previously to pregnancy by the use of expansible tents, or of my uterine dilator hereafter referred to, where the mother would probably perish in labor at the full period, with most probably the loss of the child also. Here, by premature labor, the child may be saved, and the mother's life, greater expansion of the uterus and its more probable laceration being prevented, possibly prolonged.

So far complications on the part of the mother necessitating premature labor for the sake of the child. There are others equally imperative, afforded by itself. Excessive size of the fœtus in comparison with a normal pelvis, as evidenced and rendered probable by previous labors, is hardly of less importance in connection with craniotomy, than where the pelvis is distorted or contracted, and the fœtus of natural size; but the operation in question, as compared with premature labor, we have already sufficiently discussed.

Diseases of the placenta, congestive, inflammatory or degenerative, are no less an indication, where known to exist, for an early delivery. Their diagnosis may be difficult, but yet not wholly impossible. The occurrence of the same disease in past labors, and evident intra-uterine disturbance as discovered by auscultation or by unnaturally frequent and strong fœtal movements, are, taken together, frequently sufficient to establish the fact. The impropriety of allowing such cases to proceed unaided, cannot be too strongly insisted upon. By early delivery, if the fœtus have formerly perished after the period of viability, and in addition, by special medication of the parent, if its death had usually occurred before that time, many valuable lives might annually be saved.

Premature labor as resorted to on the mother's behalf alone, putting aside the cases we have incidentally considered, where the lives of both herself and her offspring are of necessity taken into account, includes also its induction in the earlier months of pregnancy before the fœtus is viable. It may be required by diagnosticated malformation or monstrosity of the fœtus and by malformations on the part of the mother; by extreme pelvic contraction, congenital or from rickets or malacosteon, preventing the natural passage of a fœtus after viability, by tumors incapable of elevation or displacement, by contraction of the vagina, or by other severe obstetric complications, either recent or of long standing. Of this last class of causes, obstinate vomiting, puerperal convulsions, which are by no means confined to the full period of pregnancy, dropsies, irreducible displacements of the uterus, varix of the external labial vessels, sometimes fatal by laceration from tension, are all instances in point. With regard to each, the necessity of the abortion must be determined with the greatest caution, and resort be had to it, the child still living, with reluctance; especially should this be the case if the complication be supposed on the part of the fœtus, so important is it to avoid its sacrifice, if possible, and the semblance of disregarding its own important claims.

The rules for the operation when performed for the mother are the same as when for the child, save that if absolutely required, it may be resorted to at an earlier period. If the child must necessarily be lost, the labor should not be long delayed.

There are several subordinate questions arising in this connection, neither metaphysical nor merely casuistic, but practical, and because bearing on the increase of criminal abortion, directly involving human life to an indefinite extent. One of them we shall now mention.

Let physical incapacity to the birth of a living or viable child through the natural passages be supposed to exist on the part of the mother; that this has been proved by examination, or by the result of a former labor, induced or at the full time. To save the mother's life, early abortion is once brought on and the child destroyed; the woman and her husband being of course informed of the true state of the case. Is it right or justifiable, again to destroy the fœtus, and as often as sexual lust may repeat impregnation? Or should the patient be left to the risks of a subsequent Cæsarean section, which would at least give the chance of life to her child?

I am aware on which side of this question lies at present the opinion and the practice of the mass of the profession; that Nægele* and others† have ruled it right always to destroy the fœtus when a refusal to undergo the Cæsarean operation shall have been formally expressed by the mother; and that reports of instances where early abortion has been repeated, even to nine times upon the same patient, are still unblushingly published by men of the standing of Lever and Oldham.‡

But, on the other hand, in his late admirable justification of craniotomy where absolutely necessitated, Churchill makes use of the following language, which though offered in another connection, is none the less pertinent here: "It is the due appreciation of these relative responsibilities (regarding mother and child) in difficult cases, that distinguishes the wise and experienced accoucheur; he preserves a just counterpoise between them so long as it is possible to fulfil both, and recognizes the proper moment when one ceases. *One*, I say, not *either;* for I protest against the notion that *we choose which of the two lives we shall save*, a notion as false in theory as it is in practice. *No man dare make such a choice*, for we have neither the necessary knowledge, nor the right, nor the authority, to decide which is the more important life and best worth preserving."§

"My own opinion is that such a course (the repetition of abortion) ought not to be adopted, but that pregnancy should be allowed to proceed, without interruption, to the full period; and when labor declares itself, that the infant should invariably be extracted by the Cæsarean section,"‖ which, when performed in season, is by no means necessarily fatal to the mother, and may preserve life to the child.

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* De jure vitæ et necis quod competit medico in partu. Heidelberg, 1826.

† "Where one only can by any possibility be preserved, the female herself may use her right of self-preservation and choose whether her own life or that of her child shall fall a sacrifice." GUY, Principles of Forensic Medicine, p. 145.

‡ Guy's Hospital Reports, 1856, p. 12.

§ Dublin Quarterly Journ. of Med. Science, August, 1858, p. 10.

‖ RADFORD, British Record of Obst. Medicine, 1848, p. 84.

The question now so plainly put, is one for the profession soberly to discuss and to answer.

We have already shown that in many cases where instrumental delivery or the induction of premature labor is apparently requisite, the mother, if a Catholic, is sacrificed to the supposed impossibility of administering the right of baptism to the child. We do not, with some, allow that the physician is here justified in deliberately and falsely asserting the child's death, where such has not taken place, but we have revived the suggestion of a method by which this great and fundamental obstacle may be overcome. We assert that the negligence too often shown by physicians in these cases, the custom of practically leaving the mother and her child to their fate when instrumental delivery shall have been refused upon religious grounds sincerely entertained,* is, however wide it may appear from the point, directly incentive to the increase of criminal abortion. Provided the question of necessity is determined, but one course in these cases should be pursued, and that the performance of intra-uterine baptism.

The objections usually made to the induction of premature labor, namely, the uncertainty of all pelvic measurements and of the exact period of gestation, the greater liability to malpresentation, and, from the uninvoluted state of the cervix, to the evils of a lingering labor, lose much of their force when tested by our preceding remarks. If resorted to, the means of its induction are various, and, as regards their justifiability, they present a decided choice. We here omit the consideration of the methods indirect or of doubtful efficacy, as draughts, general or local baths or bleedings, forced exercise, fatigue, and voluntary falls or blows, so frequently resorted to by the uneducated, or used, in addition to other procedures, by the designing to mask the reality; these will be subsequently considered, and we confine ourselves, in comparing the other and more direct methods, only to ascertaining that which is safest and most efficacious, for these points alone can decide their respective justifiability.

The direct and reliable means of inducing abortion, in the physician's possession, are only instrumental. Draughts of all kinds, whether purgative, emmenagogue, or so-called specific,—aloes, ergot, or savin,—or energetic poisons, expelling the fœtus through a sudden and profound disturbance of the whole maternal system, as arsenic or cantharides, are too unreliable, unscientific, or dangerous either to mother or child. The justifiable methods are confined to those acting directly on the uterus and its contents, by dilating the os or detaching the membranes.

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* The rules of the Catholic Church upon this point have been already referred to. Suffice it to say, further, that while they enjoin the Cæsarean and vaginal sections, in preference to craniotomy and in cases of extra-uterine fœtation, yet turning, the use of forceps, and the induction of premature labor, where such are indicated, are distinctly allowed by them. BARRY, Medico-Christian Embryology, pp. 41, 44, 45, 60.

They are, rejecting the local application of belladonna as utterly inert:

1. Local or distant and sympathetic irritation
   By the hand;
   medicinal applications;
   electricity or galvanism.
2. Puncture of the membranes, and evacuation of their fluid contents.
3. Dilatation of the os, and separation of the membranes from the uterine walls
   By sponge tents;
   the introduction of instruments;
   or the injection of fluids.

The first of these modes, in all of its applications, is extremely uncertain in effect.

The second, though that usually attempted, is of real avail only toward the close of pregnancy, and is even then decidedly inferior to the last of the methods proposed; at an earlier period it is probably unjustifiable. In thirteen cases reported by Lever and Oldham,* where labor was prematurely induced by puncturing the membranes, only four of the children were born living, and in all these the presentation was by the vertex. It has been shown that malpositions are much more frequent in earlier than later pregnancy, and from evident causes, the comparative absence and weakness of the fœtal movements which govern its position in utero, and the want of correspondence in form between itself and the containing organ. Of the nine cases reported where the fœtus was dead, five presented by the vertex, and were therefore probably alive at the commencement of labor, as after death previous to labor, malposition very generally occurs, except there be deficiency of the liquor amnii or the pregnancy have advanced to near its close.

Again, it appears from the same statistics, which as offered for another purpose are the more to be depended upon, that in the successful cases, where the child was born living, the length of time after the operation and before the occurrence of pains, almost doubled that in the unsuccessful cases, where the child was lost; the sum of the hours in the four successful cases exceeding the sum in the nine unsuccessful ones. That is to say, in the one class of cases time was allowed for a certain amount of dilatation of the os and cervix and for some degree of detachment of the membranes, an approach, however slight, to the characters of normal labor; and in the other cases the labor was brought on at once, without either of the above processes having commenced, and when both uterus and its contents were totally unprepared. Had the times, moreover, from the commencement of labor to its close, been given in the two classes of cases, it would probably have been found that the relative proportions were reversed; that the sum of the hours in the unsuccessful cases exceeded that in the successful cases, as would be in strict accordance with the results to the fœtus.

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* Guy's Hosp. Reports, 1856, p. 4.

In premature labor, as in that at the full period, the bag of waters is required to be preserved until it has fulfilled its purpose, on the one hand, of a fluid wedge, and on the other, of protection to the child from violence till it has fairly entered the pelvic brim. Puncture is also attended with the danger of directly wounding the uterine tissues.

The last of the methods referred to, dilatation and detachment, combined to a certain extent as they must necessarily be, is in close imitation of the processes observed in natural labor, and is recommended alike by its safety to mother and child, its certainty, and the ease both to physician and patient with which it may be effected.*

From the above remarks it is evident that the profession need to exercise great caution lest they directly, though unintentionally, become the abettors of criminal abortion. But this liability is not confined to the instances already mentioned, where abortion has been intentionally induced. Nor is the matter in question one affecting merely the public health and morals, like prostitution or syphilization. It is a liability directly to increase the unjustifiable destruction of human life, and its existence cannot be too strongly impressed upon our minds and guarded against.

So true is this, that two of the French obstetricians, Moreau and Bégin, have not hesitated to express their fears, and not on religious grounds alone; the latter, with Tardieu, giving it as his conviction, that every physician should make a legal declaration of the act to the public prosecutor, immediately on inducing premature labor, even if the period of viability has been reached by the fœtus. The subject has also been discussed by the French Academy of Medicine;* and in Great Britain it has been referred to by Radford, in whose opinion an enactment is necessary, "entirely prohibiting obstetric abortion (before the period of viability), as the door for evil purposes is already too open, and would be still more so, if it was legally decided that where performed on supposed obstetric grounds, no inquiry should be made."†

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* For a full discussion of the respective merits of the several methods instanced above, see SIMPSON, loc. cit., i. p. 738.

I have lately contrived an instrument very similar to one not long since proposed by Spencer Wells for dilatation of the female urethra, which by a simple combination of the three principles involved, will probably prove of material service in the induction of premature labor. It may be called the uterine dilator, as it possesses many advantages over expansible tents for all cases of uterine disease where dilatation is necessary, either for diagnosis or treatment. A description of the instrument, and of its first application to obstetric practice, is published in the current number of the American Journal of the Medical Sciences.

Whenever an abortion is induced by a physician, even if accidentally, it is liable to be thought intentional by the patient and her friends, and consequently by the community, so far as it becomes aware of the fact. Instances of this are within the writer's knowledge.

Accidental abortions, caused by a physician, may be from two causes: error or insufficient care in diagnosis, or the absence of all likelihood of the existence of pregnancy. When cases are reported in apparent innocence of fault, and by eminent practitioners, of the pregnant uterus having been tapped for ovarian dropsy; of craniotomy having been attempted upon an infant's fundament instead of its skull, and of the same operation in another instance undertaken upon the promontory of the mother's sacrum, it cannot be alleged, I care not by whom, that this caution is unnecessary or these fears unfounded. The writer will state a few cases that have happened under his own observation. He has twice known abortion to be accidentally occasioned by the use of sponge tents;‡ the patients being near the close of their menstrual lives, and neither themselves nor the physicians in attendance supposing that the contents of the enlarged uterus could be fœtal; in one of these cases the woman had never before been pregnant, and in the other not for many years. He has twice known the introduction of an intra-uterine pessary to be followed by abortion; in neither case was there any probability of the existence of pregnancy, save in the fact that the patients were married. He has known abortion to be produced by the application of lunar caustic to the os, in a case where, from the character of the operator, no suspicion could be entertained of the uterus having been more deeply tampered with.

In cases like these, the practitioner would seem to render himself liable to the charge of malpractice, even though by the improbability of malicious intent he escaped that of criminal abortion. In all instances where there exists the slightest suspicion or possibility even of pregnancy, the only rule for operative interference must be, unless circumstances imperatively prevent, to wait the few months or weeks necessary to establish the diagnosis. Justice to the profession and to the risk of error demand that where such precaution is not had, it should be replaced by a consultation, which would at once dispel any suspicion of carelessness or malpractice, and prevent a criminal charge.

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* Bulletin de l'Académie, xvii. p. 364.

† British Record, etc., p. 82.

‡ I have elsewhere discussed this subject; American Journal of the Medical Sciences, January, 1859.

All that we have said regarding surgical obstetrics, applies as forcibly to its medicinal procedures. Though draughts and potions of every kind are, as we have remarked, of doubtful or indirect efficacy for inducing abortion, yet with some of them instances of its occurrence do at times result. In supposed obstructive amenorrhœa, unless of several months standing, and in early pregnancy where established, the physician who does not intend it, must take care lest accidentally or carelessly, by purging, vomiting or over-bleeding, he produce a miscarriage.

But there is still another point in this connection we must not pass over. We state it in the following inquiries, received from one of the most eminent practitioners of the Eastern States, and put to us in all sincerity.

"Are there not cases where a physician would be justified in suggesting a course such as he would use in amenorrhœa, even where he might *suspect*, but not *know*, the existence of pregnancy? Suppose a mother of several children, which she has had in rapid succession, and the physician feels assured that health, and possibly life, will be endangered if another pregnancy occurs; would he be criminal if he were to use common means for amenorrhœa if the menses have been absent six weeks? Are the cases always so plain that a man can decide, and may he not balance a choice of evils?"

Covering as these questions do, much of the ground already gone over, we may answer them at once, and decidedly in the negative. They apply more especially to the early months of pregnancy, where it is always impossible to know its existence; and were direct or probable emmenagogues, or instrumental interference, to be here allowed, criminal abortion might be always induced before quickening, sanctioned and permitted by the rules of medicine. To justify abortion, life must certainly or very probably be endangered, not possibly merely, which is true in every pregnancy, and might be alleged at every trial for the crime.

Hufeland advised, as a "golden rule," always to suppose the existence of impregnation in such cases, and to act accordingly; that is, to temporize long enough for the fœtus, if present, to make its sign. "Thereby," he says, "the physician will avoid much mischief, and preserve his conscience as well as his reputation."*

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* Enchiridion Medicum, p. 510.

The ideas on this subject held by my friend, are without doubt widely entertained by the profession. This paper will have served a good purpose and have saved many fœtal lives, if it do no more than carry conviction of the error and its likelihood to indefinitely extend the crime.

Again, it is undoubtedly the case that in all cases of maternal death during pregnancy, where the fœtus has arrived at the period of viability, its immediate extraction by the Cæsarean section should be effected. We have already referred to this subject, and Kergaradec, who has well written upon it, lays down the maxim that the operation should always be performed, even in the fifth month of pregnancy.* In some cases, of placenta prævia, for instance, where the chances are always more or less against the child's life, success is less probable; but this in no wise invalidates the necessity of the operation. The writer has himself performed it in the complication instanced, and in vain; but he would none the more hesitate, on this account, to repeat it. There can be no reason against the procedure in any case, and by it the child may possibly be saved. In the words of an older writer, "Est enim inhumanum, post obitum matris, fœtui pereunti et suffocari parato manus auxiliares denegare, et sæpè viventem adhuc cum matre mortuâ eodem tumulo contegere et obruere. Idcirco jurisconsulti eum *necis* reum damnant, qui gravidam sepelierit non prius extracto fœtu."†

A question has been raised concerning the rights of relatives in preventing the physician from such discharge of his duty. It has been asserted that "the father has not only the natural right of his relationship, but legal power; for Dr. Lever recently mentioned that he had consulted Dr. Alfred Taylor to know whether he would be justified in performing Cæsarean section after the death of the mother, without the consent of the father, as it appeared unjustifiable homicide to allow the infant to die. Dr. Taylor gave his opinion that, in law, the infant belonged to the father,—the infant with the life thereof,—and that if Dr. Lever touched it, even to rescue it from death, an action would lie against him."‡ I must, however, declare such doctrine to be false and pernicious. If signs of the child's life remain, no physician should hesitate endeavoring to preserve it, unless restrained by actual force. I reiterate my conviction that such neglect, or seeming neglect, of fœtal life is an actual wrong, both against the individual and against society.

Similar points in which physicians are directly interested, as tending by their apparent disregard of fœtal life to render themselves innocent abettors of criminal abortion, are not uncommon. Such are neglect of efforts to prevent miscarriage when threatening, or where it has become an established habit; and of attempts at resuscitating still-born children where there is the slightest chance of success, and success has now been rendered much more probable by the methods of Marshall Hall and Silvester; the performance of operations of any kind upon a pregnant woman, even tooth-drawing,* that might be delayed; the careless or unnecessary use of ergot; the relying upon a single and unaided opinion, where not one life only, but two, may be endangered.

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* Question d'Embryologie Médicale, etc.; Revue de l'Amorique et de l'Ouest, 1846.

† JOAN. RIOLAN., Anthropographia, lib. vi. cap. vii. p. 589.

‡ CHURCHILL, Dublin Quarterly Journ. of Med. Science, August, 1858, p. 22.

Other instances might be adduced; but enough has already been said to prove that the importance of the subject we are considering, and the responsibilities resting upon the profession regarding it, demand as I have elsewhere suggested,† that physicians should possess, should acknowledge, and should govern themselves by, an *Obstetric Code*—the necessity of which will be made even more manifest, as we proceed in our investigation of questions pertaining to Obstetric Jurisprudence. We have referred to some of its leading principles, but have done no more than faintly foreshadow them.

Distressing in the retrospect, inconvenient frequently in the present,‡ such a Code would undoubtedly prove; but it is demanded of the profession by the progress of our science, by humanity, morality and religion. Were the facts in the case more generally known, and the existence and sanctity of fœtal life more universally appreciated, it would be also demanded by public opinion.

We have now seen that "the absurd enactments still remaining on the statute book, the careless indifference with which society views the crime, the reluctance with which means are adopted to prevent its occurrence, its increase, and its frequent induction by obstetricians, are all evils which loudly and imperatively call for the closest investigation."§

We proceed to the other relations of criminal abortion, more especially to those immediately pertaining to the claims and course of justice.

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* A case in point has been reported by the writer; Amer. Journ. of the Med. Sciences, April, 1859.

† Reports to the Suffolk Dist. Med. Society of Massachusetts, 1857, and to the American Medical Association, 1859.

‡ "It would in my opinion," says Ramsbotham, referring to the nature of fœtal existence, "be much better not to endeavor to explain the secrets of nature, so deeply hidden."—(Obst. Medicine and Surgery, p. 309.) This belief seems still, in practice, very widely entertained.

§ CLAY, Obstetric Retrospect, March, 1848, p. 44.

(TO BE CONTINUED.)

ART. II.—*The Present State of Microscopical Science, Medically Considered.* By JOHN H. PACKARD, M.D., of Philadelphia.

(CONTINUED FROM MAY NUMBER.)

THE previous portion of this article having been devoted to the discussion of the cell and its development in the several tissues, we are ready to take up

III. *Such processes as are open to microscopical study, and yet involve several textures.* Of these the most important is the capillary circulation, which can readily be seen in the web of the frog's foot, in the tail of the tadpole, in the wing of the bat, and in the lungs and mesentery of small animals. In health, a continuous current rushes through the capillaries, the red disks moving rapidly along the centre of the channel, and the white corpuscles forming the so-called "still layer" at the periphery. This still layer does not exist in the lungs, at least in the capillary rete connecting the pulmonary arteries and veins; for here the main object to be attained is the aëration of the red corpuscles. But here, as elsewhere, whatever interchanges may go on between the air or the tissues and the blood-corpuscles, the liquor sanguinis probably acts as the medium of communication.

From the continuous character of the current seen in the capillary vessels under the microscope, must be inferred the necessity of some other agent than the heart for carrying on the circulation; and thus we are compelled to recognize an affinity existing between the tissues and such red corpuscles as have not yet lost their oxygen. The idea of such an affinity not only serves to explain some points in connection with secretion and growth, but has an important bearing upon the general theory of life. Each ultimate structural element may be said to possess a certain power over the blood, an elective affinity for just those substances which are needed for its nutrition or for the exercise of its function. Nor is it more difficult to conceive of such a special power of attraction, than to assign any other rationale for the distribution of the various secretions.

Having placed in view the capillary circulation of the web of a frog's foot, we may, by applying a local irritant to any point in it, induce a condition of the vessels at that point imitating more or less closely that which occurs in inflammation.

Two chief phenomena ensue when this is done: in the first place, the vessels alter their calibre; secondly, they become crowded with red corpuscles.

Concerning the former phenomenon, there has been much discussion; some asserting that there is first a contraction and then a dilatation, others, that the dilatation is primary; the latter party are again at variance as to the action or passive character of the enlargement. Some observations published by Mr. Lister* bear upon these points.

Mr. Lister states that in the minute arteries of the frog's foot he has detected muscular fibrils of the non-striated variety, winding spirally between the inner and outer coats; a circumstance clearly explaining the occasional occurrence of contraction as a primary effect of irritation. And as the contractility of the fibres must necessarily be at length exhausted, we have one reason why dilatation should follow after a time.

But the nutrition of the part is under the influence of the nerves with which it is supplied; and no irritation can be so managed as not to affect their terminal fibrils. Here then, in the nervous excitement, giving rise to an increased demand for blood-corpuscles, is another cause for the dilatation of the vessels. We think it may be asserted that, except when the non-striated muscular fibres before alluded to are thrown into action, the walls of the vessels are perfectly passive, dilating simply because of the mass of corpuscles *drawn into them by the surrounding tissues.*

And this leads us to the second phenomenon, the crowding of the capillaries with red corpuscles. The tissues, having attracted an excess of corpuscles, are so deranged functionally, that they do not, as usual, still demand more, and thus keep up the succession; hence there is actually no force to move the mass along. All around the focus where this takes place, not only are the corpuscles moving which would properly have traversed the obstructed channel, but a minor degree of the same excess in the attractive power prevails. The blood-corpuscles, thus crowded together and stagnant, break down; their coloring matter passes into the liquor sanguinis, which oozes through the walls of the vessels and stains the surrounding tissues.

The products of inflammation, varying in different cases, are of interest when studied microscopically. Of these, we recognize only *lymph* and *pus;* for we should not speak of a merely increased secretion, or of blood, as a product of inflammation.

Lymph is found under the microscope to consist of corpuscles, very similar to the white corpuscles of the blood, floating in a clear fluid. And wherever poured out, it has these anatomical elements; no difference exists between that found upon a mucous and that upon a serous surface, although incidental circumstances modify the results in each case. As has been previously remarked, there is a very intimate relation between mucous and serous membranes; and the lymph-corpuscle which in one, placed under conditions unfavorable to its higher development, becomes a pus-corpuscle, will in the other go on to the formation of a perfect fibre. The greater activity of cell-production in the mucous membrane, and the less persistent character of the cells, with the constant escape through them of certain matters from the blood, would lead us to expect just what takes place. Lymph poured out on the surface of the pericardium or pleura, is much more under the assimilative influence of the tissues than that effused in the vagina or urethra; but let the distinctive incidental circumstances be changed,—let the pleura be opened to the atmosphere, or two mucous surfaces less protected by epithelium than usual be placed in contact,—the results are changed also.

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* Transactions of the Royal Society of Edinburgh, vol. xxi. p. 549.

The process of suppuration is in some respects quite analogous to that of secretion, with which it was formerly considered to be identical. Plastic matter is poured out from the capillary network underlying a surface, and is by its very nature disposed to assume a form; but, little or no assimilative force being exerted over it, it fails to acquire any but the very lowest type of organization. Some pathologists regard pus as degenerated lymph; but if it is so, the conversion of the lymph-cell into the pus-corpuscle must occur almost at the very moment of its formation. Many circumstances go to prove an extremely intimate alliance between the two substances; but the precise relation between them is still undecided, and seems indeed to vary in different cases. Thus in purulent ophthalmia, the exuded material presents the characters of pus *ab initio;* in empyema, and in acute abscesses, the breaking down of effused lymph undoubtedly takes place.

Microscopic researches have shed much light upon the mode in which injuries of the different tissues are repaired. The material poured out from the blood-vessels for this purpose assumes the form of nucleated cells or nucleated blastema, and is subsequently influenced very much by the surrounding tissues, coming at last to resemble them to a greater or less degree. But the point most discussed in connection with this subject is the manner in which the new blood-vessels are formed; whether the loops or arcades of capillaries, discernible in thin perpendicular sections of granulating parts, are outgrowths from the vessels below, passages channeled by blood-corpuscles forced through the organizing mass, or the result of an inherent power in that mass to form its own vessels and its own circulating fluid. This latter view is sustained by some undoubted facts, but only in exceptional cases. Generally, pouches or cul-de-sacs sprout out from the neighboring capillaries into the reparative material, and by their meeting and coalescence form arched tubes; according to Mr. Paget,* if one of these pouches should burst, the blood-corpuscles, thus set free, will still go on in the proper direction, and the final result will be the same.

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* Lectures on Surgical Pathology, Am. edition, p. 147.

Besides the processes now enumerated, there are two others, which, although properly claiming earlier notice, may be most conveniently spoken of in this connection.

Muscular contraction has been already alluded to in a former part of this article. It may be observed by placing under the microscope a few fibres cut from the leg of a living frog, and irritating them by means of a hair introduced beneath the thin glass cover; the effect is better if strychnia is previously administered to the frog. From some experiments made by Dr. C. S. Boker and myself, it appeared that a galvanic current passed through an isolated muscular fibre was entirely without effect. We also found that contractions sometimes took place in the individual fibrils composing the fibres, so that the striæ, instead of running directly across from side to side, became zigzagged; a small part only of any one stripe was involved, but the adjacent ones were affected likewise, so that rows of the ultimate sarcous elements were seen to act in concert.

Another very interesting phenomenon, not discoverable without the aid of the microscope, is *ciliary motion.* This may be best observed in the ciliæ of the epithelium from the trachea of a newly-killed animal; it seems to be independent of any muscular action or other mechanical agency, and ceases spontaneously after a certain length of time; it may, however, be re-excited by the application of a solution of potassa. Its object is supposed to be the propulsion of particles of mucus, etc. toward different outlets; and I believe it does not occur where this function can be fulfilled by muscle.

IV. *Such structural elements as constitute morbid deposits.* This subject is involved at the present day in peculiar uncertainty and confusion, and hence must be discussed with as much circumspection and impartiality as possible. And here we may at once admit that the revelations of the microscope have given rise to much of this obscurity; but so far from regarding such an admission as casting any discredit upon the instrument, we shall try to show that the truth of the whole matter is most likely to be arrived at by its aid. Dealing with material and visible phenomena, we must hold theory and hypothesis in abeyance, trusting to patient research and close deduction, certain that in this way alone can nature be made to disclose her workings. To give up in despair, or to jump at a conclusion from insufficient data, would be equally unworthy of a scientific mind.

Our present task is simply to survey the field of labor, in order to note what is established and what doubtful; endeavoring to introduce into the discussion as little irrelevant matter as possible.

A morbid deposit may be supposed to consist either in an undue increase in the quantity of any tissue, in the occurrence of any normal tissue in an abnormal situation, or in the organization of blastema according to a type differing from that of any normal structure. Under the first and second of these heads would be included the homologous growths; the third would comprise the heterologous. As long as the general shape and structure of the organ in which the deposit occurs is not materially altered, the term hypertrophy is used to express the condition of things, and with this we have now nothing to do. But when the new material is thrown out as it were in a purposeless and irregular manner, it forms a *tumor*, be it like or unlike any healthy tissue—homologous or heterologous.

In the earlier days of microscopical science, a visible difference was asserted to exist between the ultimate structural elements of homologous or benignant, and heterologous or malignant tumors. And many writers still employ expressions indicative of a belief in such a difference; we read of cancer-cells, the microscopic characters of cancer, etc. But no one can become practically acquainted with this subject without finding that malignancy adheres to no special morphological type. In other words, a microscopic examination, made without reference to clinical history, cannot in all cases be depended upon.

A doctrine which finds great favor at the present day, and of which Virchow and Wedl are the chief exponents, may be briefly stated as follows: The structural elements of all new growths have the fundamental characters of normal cells, disguised variously by incidental influences; malignancy is merely relative, and depends upon some *dyscrasis* of the blood not yet elucidated.

Much may be said both for and against this view. It has the advantage of simplicity, and seems to narrow down the unexplained part of the subject; but at the same time it transfers the enemy to a more impregnable position. Several facts seems to bear it out by analogy; thus the pus of gonorrhœa, absolutely identical in physical characters with that from an ordinary abscess, has yet an undoubtedly specific nature. The arguments against it are mainly derived from clinical observation, the general course and symptoms varying so widely and so constantly in cases of cancer or tubercle from those in cases of innocent tumors.

Having now very briefly stated the main points of the great vexed question in pathology, let us take a concise survey of morbid deposits in their microscopical aspect; arranging them altogether with a view to convenience.

Fatty tumors, whether continuous or not with the normal *tela adiposa*, are the simplest of all out-growths, and possess no interest except from this fact.

Fibrous tissue, and its allied forms, constitute a very extensive and important variety of morbid deposit. Many growths of this kind, seemingly of very diverse character, are shown by the microscope to be anatomically identical, the differences between them residing in the arrangement or in the stages of development of the tissue in the several cases. Polypi, fibro-cellular and fibrous tumors, and those known as fibroid, are thus placed in the same category; the "painful subcutaneous tumor" is often, though not always, to be added to the list.

Now, in nearly all confessedly malignant growths, fibrous tissue is found in more or less quantity, and in all stages of development; in some cases, indeed, this seems to be the only element concerned. Polypi, especially in the antrum maxillare, are well known to be suspicious in their character, and sometimes unequivocal. Tumors consisting apparently of the purest fibrous tissue occasionally exhibit such a clinical history as places their malignancy beyond a doubt; and the same may be said of the fibroid and fibro-nucleated growths so well described by Paget. In view of these facts, we cannot assign the family of fibrous or fibroid tumors a place among homologous or benign growths; their position is a doubtful one, and must remain so until they have been further studied.

Cartilage, *fibro-cartilage*, and *bone* may occur as morbid deposits. Either may exist by itself, or they may be variously combined; and the degree of structural perfection attained varies in different cases. Perhaps no class of tumors presents so great a variety of microscopic appearances as those composed of cartilage and fibro-cartilage, in proportion to the number of cases met with; and these growths can hardly be assigned a definite position as yet. They sometimes present clinical phenomena savoring strongly of malignancy, but are in general perfectly benign.

When bone is formed, it may be developed through cartilage, but more frequently through fibrous tissue; and here also every gradation is observable, from a mere stelliform deposition of earthy salts to the complete Haversian ossicle. Nor does any assimilative force seem necessary to initiate the action, since Dr. Ogle* found canaliculi and lacunæ in a phlebolithe, and osseous formations are not uncommon in the membranes of the brain and spinal cord; they also occur in connection with malignant disease of the testis. Microscopic examinations are of great value in the study of these deposits, especially when aided by chemical tests. Thus the so-called ossification of arteries may be sometimes shown to be a mere atheromatous degeneration, and to depend for its hardness upon the solidification of cholesterine.

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* Trans. of London Path. Society, vol. vii. p. 133.

Another form of tumor would seem to be mentioned most appropriately here,—the *myeloid;* since, as its name imports, it presents a structural analogy with the medullary tissue of bone. Generally found in connection with bone, these growths sometimes become to a greater or less extent ossified; thus bearing out the idea of an intimate alliance between them and the normal texture alluded to. But they, like several of the preceding forms, sometimes run a course indicating malignancy; so that of them also it must be said that their true position, if constant, cannot at present be assigned.

Muscular tissue of the unstriped variety is met with in fibrous tumors of the uterus, where its presence may be readily accounted for. No instance is upon record in which striated muscle has been found as a mere outgrowth, with or without other tissues.

Nerve-elements are present in some tumors, but the rank they assume is doubtful. Thus it may be questioned whether they belong to the new growth, or are merely surrounded by it—carried away as it were by the force of external circumstances; which latter seems most probable in the majority of cases. In the "painful subcutaneous tumor," the excessive tenderness is not owing to nerve-structure entering into the new growth, but merely to the intimate connection of the latter with some nerve-fibre, which may be in an entirely normal state. And even in the so-termed *neuroma,* the proper nerve-substance is not increased, but simply the fibrous tissue of its investing membrane.

Glandular tumors have been made the subject of careful study by many pathologists. The most familiar instance of them is, perhaps, that called by Lebert "partial hypertrophy" of the mammary glands. As their name implies, they consist of the elements of gland-tissue, irregularly placed.

Now it seems to me that the scope of this name should properly be wider than it is. It has several times occurred to me to detect a regular epithelial lining in cysts connected with the ovary, and between these and the epitheliomata there seems to be the same analogy as between serous and mucous membranes. Wherever they may occur, morbid deposits are, as has been mentioned, more or less under the influence of the laws governing healthy nutrition; and therefore they should certainly be grouped for study according to the normal elements with which they range themselves. Hence, if the histological views expressed in a former portion of this article be correct, all morbid growths connected with serous and mucous membranes, and with glands generally, should be placed in the same category.

Tumors of this kind, as might *a priori* be expected, present every stage of complexity of structure; from the mere aggregation of epithelial cells, some epitheliomata advance to an arrangement of them in concentric layers; fibrous tissue in variable quantity may be added to this; and so by successive steps the tubular ramifications, lined with epithelium and surrounded by a stroma of connective tissue, are arrived at, and we have the acknowledged "glandular hypertrophy."

The occasional deposit of cholesterine in the crystalline form among the cells making up an epithelioma, (constituting the *cholesteatoma* of Müller,) must be regarded as akin to similar deposits in cysts which have undergone inflammation, and affords another proof of the alliance between the two forms of disease. In the cyst the fundamental gland-structure is in a state of involution, in the epithelioma it is in a state of evolution.

Concerning that anomalous substance, *colloid* matter, very little need be said here. Its presence does not imply a malignant character in the growth which contains it, although it forms a very large proportion of the mass of some cancerous tumors; its position structurally is extremely low, and not very well defined.

In the course of the foregoing discussion allusion has of necessity been made to malignancy, as a character often assignable to outgrowths; and it has been stated that this may be manifested by some tumors, whose form-elements do not differ from those of such as are quite innocent. Such cases, instead of affording evidence against the value of the microscope, simply show its true office as an auxiliary to clinical observation; that the field of its operations is even wider than its earlier advocates asserted.

Tubercle, which from its relations to the system at large, and the evident tendency it so often displays to spread among the tissues adjacent to it, seems to merit the epithet "malignant," has microscopic characters by which it may, in general, be readily recognized. Lymph or pus, in a state of degeneration, may have somewhat the same appearance; and hence caution should be observed in cases where any such error might arise.

Lebert's description* of the "tubercle-corpuscle" is so clear and excellent, and sets forth so well the views commonly held upon this matter, that I subjoin a translation of it. After speaking of the molecules and yellowish intercellular substance met with in tubercle, he says:—

"(3) *Corpuscles or globules peculiar to tubercle.*—The constant and characteristic element of tubercle is the tuberculous globule, (*globule tuberculeux,*) which, as we shall presently see, is distinct from every other normal or pathological primitive element. It is rarely round or oval; but, although irregular in shape, it always approaches more or less one of these forms. Its outline is usually angular, rounded when seen only from one side, but rather polyhedral when floating freely, a condition necessary for the accurate observation of its surface. This latter, although irregular, is smooth, and has no granular matter adhering to it. The volume of these globules varies between $\frac{1}{400}$ and $\frac{1}{120}$ of a millimètre; we have sometimes seen it as much as the $\frac{1}{100}$. These measurements are the mean result of a great many observations. When the globules are more ovoid, the mean of their width is $\frac{1}{130}$ of a millimètre, while their length varies between $\frac{1}{125}$ and $\frac{1}{160}$. The contents of these globules consist in a more or less transparent matter, with molecular granules. We regard the former as somewhat tenacious, (*solide*,) having never observed within these corpuscles the molecular movement visible when many granules exist in a liquid medium within the cell.

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* Anatomie Pathologique, vol. i. p. 332.

"The contained matter is sometimes granular; sometimes again there exists a sort of lacuna more transparent than the rest. Real nuclei are rarely seen here. In an exceptional case of tubercle in the vertebræ, the ordinary tubercle-corpuscles, irregular in shape, contained a nucleus $\frac{1}{200}$ of a millimètre in diameter, with one or two very minute nucleoli. This important fact argues in favor of an opinion we long since advanced, viz., that the peculiar corpuscles of tubercle are imperfectly developed cells; it is likely that the firm consistence of the surrounding blastema hinders their evolution. Hence we now and then observe in tubercle cells more fully completed. It seems as if the blastema became firm so quickly as to prevent the differentiation of the cells into cell-wall, nucleus, and nucleolus. If we claim for tubercle a special element of diagnostic value, an element of which the shape and appearance are mainly due to the conditions of its development, we would not pretend that herein resides the peculiar nature of tubercle. Time alone will show whether such elements belong to tubercle, cancer, etc. For the present, we cannot but insist upon the special form of these elements, without trying to determine their precise value and bearing. The granules inclosed within these corpuscles vary in number; sometimes there are four or five, sometimes ten or more. They are never so numerous, however, as in the granular corpuscles, properly so-called; a few of them only can be seen at once, because the globules are almost as deep as they are long and wide, and hence can only be in part exactly in focus, when viewed with high magnifying powers. The transparent granules within them have not the aspect of nucleoli. The color of tubercle-corpuscles is a pale yellow, but is entirely lost when they are highly magnified."

Cancer has, for obvious reasons, constituted one of the most interesting of all the subjects embraced in microscopical pathology. Owing to the rash statements and hasty conclusions of some of the earlier micrographers, the question whether any particular growth did or did not partake of this nature, was for some time expected to receive a positive solution as the result of microscopic study alone; and this too from a mere glance, perhaps, at an insignificant scrap cut from any portion of the specimen. Further experience showed the fallacy of this expectation, the anatomical elements of tumors, undoubtedly cancerous, being found far from uniform; and now the favorable opinion formed of the microscope, based originally upon insufficient evidence, was abandoned with equal or even greater readiness. But there were not wanting those who had from the first observed a prudent caution in the matter, and who still adhered to their philosophical pursuit of the truth. Among these must certainly be numbered the German school, represented so ably by Virchow and Wedl; the views of these pathologists have already been alluded to, and need only be mentioned again for the sake of a respectful expression of dissent. Neither in France, England, nor America, have these views been generally received as yet, mainly, I think, because they sustain a less satisfactory theory than that which would seem to be unavoidably abandoned in accepting them. For if the material by which cancerous disease is represented in the economy be *nothing but* areolar or connective tissue, or epithelium,—like a body of well-meaning but illiterate men seduced into acting as tools in a bad cause,—then either there is no such thing as cancer, (in which case the general rejection of Bishop Berkley's opinions might as well be reconsidered,) or else the whole matter is made more incomprehensible than ever. Nor does there seem to be any reason for denying a specific character to the cancer-cell, even if the peculiarity be invisible; certainly the pus of a chancre, or of gonorrhœa, is specific, although to all appearance identical with that of any ordinary abscess. But more than this, we do find in every normal texture of the body a certain type, pretty closely adhered to by all the constituent anatomical elements. In cancer, on the contrary, it is common to meet with a very great variety of cell-characters.

As far as I can ascertain, the opinion of most American pathologists coincides with that of Lebert, whose view of the "cancer-cell" is as follows:—*

"The type of the cancer-cell is a small regular sphere, with an elliptical nucleus eccentrically placed, occupying nearly half, or more than half of the cell-cavity, and inclosing one or several large nucleoli. But this type is not often met with in perfection, (*bien pur;*) the cell-wall assumes an ovoid or elongated form, or becomes triangular, with angles either acute or obtuse, or fusiform, pointed at each end and wide at the middle; or again it may present, in place of two appendages opposite to one another, (*verticaux,*) a single long and pointed appendage, passing off from a round cell, or three or four, likewise long and pointed, passing off from an ovoid or irregular cell. It would be useless and even impossible to describe all these forms here; it is enough to mention the fact, that this multiformity of the cell-wall is not observable in an equal degree in any other species of cell."

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* Anat. Pathologique, vol. i. p. 279.

Among English writers, Mr. Paget has perhaps discussed this subject more fully, in the aspect which now concerns us, than any one else; and from the tone usually assumed by his countrymen, in connection with reports of cases, (a criterion quite as accurate, I take it, as any formal statement of opinion would be,) his views have met with their very general approbation. These views seem to me to be set forth in the following passage from the valuable work already several times referred to:—* "Together with the disorderly construction, and the peculiar cell-forms, we may often observe, as characteristic of cancers, the multiformity of the structures composing their mass. It is not equaled, I think, by any tumors, unless they be the cartilaginous, or the mixed glandular and cartilaginous. * * * It would be too tedious even to enumerate more forms than these of the component cancer-structures, and I need not again describe them. It is not their multiformity, so much as the existence of many of them in a single mass, that is generally characteristic of cancer.

"Various as are these corpuscles of cancers, it is yet to be observed that there are none so entirely different from those of normal structures that we cannot point out among them their type or parallel. No observation since Müller's time has invalidated his demonstration of this principle. The experienced microscopist will, indeed, very rarely fail in the diagnosis of a cancer by its minute structures; but he only discriminates them as specific modifications of the nucleus, nucleated cell, endogenous cells, and other forms, of which the types are in natural parts; he finds among them no new type-forms."

I think it may safely be said that these ideas of Mr. Paget's are in accordance with those of a large majority of the microscopists of this country; although the discussion of the subject is at present so incomplete, and is attracting so much attention, that hardly any surmise can be attempted as to its event. Perhaps no other question in pathology could have been debated, as this was a few years since, in the *Academie de Médecine* in Paris, with so unsatisfactory a result.

From what has been stated under the present head, it is manifest that the opinions of the profession in regard to the pathology of tumors are far from settled. But it does not follow that they never will be. On the contrary, the earnest scrutiny which all observations and theories bearing upon this very wide and important subject are now undergoing, warrant the hope that further light may be obtained. Let it be remembered that as yet we are hardly beyond the threshold of this department of inquiry; that no real advance can be made except by the impartial as well as critical examination of all the available facts; that prejudices and pet theories may have to be sacrificed, but at last we shall arrive at as much of the TRUTH as is granted to finite minds to know. Here is the great aim of science, and to this end all her votaries must use their powers, in whatever branch of her service they may be engaged.

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* Lectures on Surgical Pathology, Am. ed., pp. 654–55.

V. *Matters secreted and excreted.* Under this head we have to deal with substances separated from the blood, either by way of mere elimination or for the fulfilment of some further purpose. These substances are produced as the result of the life-actions, healthy or morbid, of different organs; and when examined microscopically, some of them display characters allied to those of the living cell, while others are in the form of mere crystals. But they are all, practically speaking, without the sphere of vitality; none of them, so far as we know, are organizable.

Of the forms allied to living cells, the *spermatozoid* is doubtless the most important. The value of its microscopic recognition in cysts connected with the testicle, in the urine, and in cases of alleged rape, need not be enlarged upon. As yet, the mode in which its fecundating influence is exercised upon the ovum has not been determined; in some of the lower animals it has been shown to penetrate the ovum, and then to disappear, but this process is not known to occur in mammalia.

The *ovum* itself is in a manner secreted within the cavity of the Graafian vesicle; its cell-nature has been already mentioned, and the analogy of the vesicle with other glands is quite as clear as that of the solitary and agminated glands of the intestine, since it, like them, discharges its contents by dehiscence upon the mucous surface of a canal leading outward.

Mucus, wherever found, has certain distinguishing corpuscles, pretty closely resembling those of lymph, and somewhat also those of pus. *Saliva* from the front part of the mouth is merely a dilute mucus, whose corpuscles are somewhat more granular, and which contains also epithelial cells; that derived from the tonsils and fauces differs from this only in being less dilute.

Milk is characterized microscopically by a great abundance of oil-globules, which are perhaps true Aschersonian bodies, having only a caseous instead of an albuminous envelop. In the colostrum-corpuscles, usually seen in the milk of the first few days, it has occurred to me to detect nuclei with nucleoli; this appearance has indeed been uniformly present in the specimens I have examined, although it is spoken of by most authors as exceptional, if alluded to at all. Reinhardt's theory, that these bodies are the effete epithelial cells of the lactiferous tubes, does not seem to be favorably received by physiologists, and their office remains unexplained.

The *bile* has been carefully studied by some microscopists; the crystals thus observed in animals are mainly acicular, variously grouped, and composed of glyko-cholate of soda, the tauro-cholate of soda being uncrystallizable. Cholesterine is discharged from the blood by way of the liver, but is not found crystallized in the bile. Human bile contains no crystals or solid elements of any kind, and is therefore without the province of microscopy.

The *urine* has received very great attention from many microscopic observers, especially on account of the clinical advantages derivable from this source. Of the various deposits which occur in morbid urine, some indicate disease of the kidney, others alterations in the mucous membrane of the bladder; others again are significant of pathological changes in more or less remote organs.

So general is the recognition of the usefulness and authority of the microscopic study of these substances, that any extended discussion of the matter would be unnecessary here; nor indeed could any other than a very imperfect sketch be given in the space at command. But perhaps an enumeration of such urinary deposits as have hitherto been subjected to this method of examination may aid our present purpose.

From healthy urine there may be obtained—

Urea;
Uric acid;
Creatine;
Creatinine;
Hippuric acid;
Chloride of sodium;
Phosphate of lime;
Crystals accidentally present, derived from the food;
Epithelial and mucus-corpuscles.

Pathological urinary deposits have been variously classified by different authors. Some of them are derived from the metamorphosis of the tissues, some from that of the food, and some are merely inorganic matters, which have never actually become part and parcel of the economy. Laying aside, however, all reference to the mode of origin of the solid matters found in morbid urine, as irrelevant, we may arrange them into such as have a crystalline form, and such as have an organic form.

Among the crystals, there are found—

Uric acid;

Urates of $\left\{\begin{array}{l}\text{soda,}\\ \text{ammonia,}\\ \text{magnesia;}\end{array}\right.$

Hippuric acid;

Oxalate of lime;

Purpurine;

Cystine;

Phosphates of $\left\{\begin{array}{l}\text{lime,}\\ \left.\begin{array}{l}\text{ammonia,}\\ \text{magnesia,}\end{array}\right\}\text{Ammonio-magnesian phosphate;}\end{array}\right.$

Carbonate of lime.

Among the organic forms, (parasites being alluded to hereafter,) we have—

Blood,
Mucus,
Spermatozoids,
Milk,
Pus,
Epithelium,
Torula cerevisiæ,[*]
Oil-globules.

In the study of many of the crystals above named, the employment of polarized light not only produces the most beautiful appearances, but is of essential service in distinguishing between one substance and another.

Fæcal matter has been investigated microscopically by Frerichs,[†] Hammond,[‡] Höfle, Wehsarg,[§] Ihring,[||] and others. The organic constituents thus detected are partly the remains of substances taken as food, such as muscular fibre, more or less broken up, fibrous tissue, fatty matters, the indigestible portions of vegetables, and sometimes starch-corpuscles; epithelial cells and mucus-corpuscles from the lining membrane of the intestine, and occasionally, in diseased conditions, blood-disks. The most frequent inorganic constituent is the ammonio-magnesian phosphate; Marcet[¶] found also a peculiar substance, whose crystalline form was an acicular four-sided prism, and to which he gave the name of *excretine*. Perhaps the further pursuit of these investigations may shed additional light upon the later stages of the process of digestion.

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[*] In diabetes. Dr. W. A. Hammond has also found it as a result of an exclusively amylaceous diet. (*Prize Essay of Am. Med. Assoc.*, 1857.)

[†] Wagner's *Handwörterbuch der Physiologie*, art. *Verdauung.*

[‡] Prize Essay of Am. Med. Association for 1857.

[§] *Mikroscopische und Chemische Untersuchungen der Fæces gesunder, erwachsener Menschen.* Giessen, 1853.

[||] *Mikroscopisch-Chemische Untersuch. Menschl. Fæces unter verschiedenen pathologischen Verhältnissen.* Giessen, 1852.

[¶] Philos. Trans., 1854.

VI. *Animal and vegetable parasites.* With regard to some of these organisms there is room for doubt, whether they should be looked upon as the causes, the effects, or the concomitants of disease. They have been studied by many distinguished observers, among whom may be mentioned Diesing, Küchenmeister, Robin, and Leidy, as perhaps the most authoritative. We have, of course, to speak here of those parasites alone whose existence is revealed by means of the microscope; although this instrument has afforded very valuable information concerning the anatomy and physiology of those large enough to be detected with the naked eye.

Some of these parasites exist within the sphere of life; thus the *Trichina spiralis* is found embedded within the voluntary muscles. Valentin* has described a parasite, large numbers of which were seen by him in the circulating blood of the *salmo fario*, (salmon-trout;) it consisted of a single cell, with processes extending from it in different directions. A similar organism was seen by Gluge† in the blood of a frog; and it is suggested by this observer that a connection may perhaps be found to exist between these parasites and intestinal worms.

So late as 1834, M. Breschet read before the Academy of Medicine in Paris, a paper, in which the idea was seriously entertained, that pulmonary tubercles may be of parasitic origin; but no sufficient grounds exist for adopting such a view.

All true parasites, whether animal or vegetable, are derived from sources external to the body; and with the exception of those already mentioned, they are all found upon the surface-layer, cutaneous or mucous.

Upon the skin of man there are only two microscopic animal parasites now known, viz.: the *demodex folliculorum*, and the *acarus scabiei* or *sarcoptes hominis*. The vegetable formations are more numerous; an alga called the *leptomitus epidermidis* has been observed in vesicles which appeared after the application of a poultice, and fungi of various kinds are found in ulcers, in chloasma or pityriasis versicolor, in herpes tonsurans, in mentagra, in plica polonica, in porrigo, and in favus. I have myself met with wisp-like formations of fine fibres in the vesicles of herpes phlyctenodes and herpes zoster, and have found in eczematous scabs epithelial scales crusted over with spores; sometimes these latter were floating freely in very great numbers, tending also to arrange themselves here and there in dendritic forms. And a fungus is described by Meissner and

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* Müller's Archiv., 1841, p. 435.

† Ibid., 1842, p. 148.

Virchow as occurring in the finger and toe-nails in certain morbid states.

In the mucus which collects around the teeth, upon the edges of the gums, there is found a parasitical animal consisting of a single cell, and called the *denticola hominis.* A species of alga, the *leptothrix buccalis,* inhabits the dorsum of the tongue, and the spaces between the teeth. The *leptomitus Hannoverii* occurs on the mucous membrane of the tongue and pharynx in some low forms of disease. Perhaps, however, the most important of all these parasites is the *oidium albicans,* the fungus which is found in aphthous ulcers of the mouth.

In the stomach and intestines we sometimes find the yeast-plant,—the *cryptoccus* or *torula cerevisiæ;* and under circumstances not yet clearly made out, the *sarcina* or *merismopædia ventriculi,* discovered by Goodsir in 1842; both these are algæ. A confervoid growth has been described by Dr. Farre, as detected by him in the alvine discharges of a dyspeptic patient who had an attack of colic; he gave it the name of *oscillaria intestini.*

In discharges from the urinary bladder two animal parasites are said to have been discovered: the *dactylius aculeatus* and the *spiroptera hominis,* both which are allied to the nematoid worms. Two forms of algæ are sometimes evacuated in the urine,—the *leptomitus urophilus,* and the *torula cerevisiæ* or yeast-plant,* before alluded to as occasionally met with in vomited matters.

Another species of *leptomitus* is found in the uterine mucus, and still another is described as seen in a puriform discharge from this organ. In the eye a parasite of the same variety has several times proved a source of great disturbance. The *trichomonas vaginalis* is said by Donné, Dujardin, Kölliker and others, to have been detected in unhealthy vaginal discharges.

Lastly, Bennett and others have described certain fungi as occurring in inflammation and gangrene of the lungs. Here we may readily suppose the spores of these organisms to have been taken in in the process of respiration, and their development to have been favored by the state of the diseased parts, just as when mould forms upon a decaying vegetable.

It is extremely probable that further researches may extend the list of parasitic growths, perhaps to a much greater length. Great care is, of course, necessary in pronouncing upon the nature of any organism suspected to belong in this category, on account of the unavoidable risk of error; matters whose presence is purely accidental may be assigned undue importance, while such as really claim attention may be overlooked entirely.

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* It is doubtful whether this organism is really formed in the bladder, or is merely a result of fermentation outside of the body. As was said in a previous note, it is met with in cases of diabetes, and also when the diet has been exclusively amylaceous, sugar being as a consequence formed in the urine. Strictly speaking, it has no claim to a place among parasites.

The foregoing survey of the ground now occupied by microscopy, although of necessity very concise, may serve to shadow forth what has already been done in this department of research, as well as in some measure also to indicate the direction in which further advances may be made.

Still another object has been indirectly aimed at,—the vindication of the microscope from the aspersions cast upon it even by some who are themselves reaping the benefit of its revelations.* Granting that mistakes have been made with it, that rash assertions and unsound arguments have been put forth as the results derived from its use, by incompetent or careless observers, there yet remains a mass of undoubtedly valuable knowledge acquired by its aid. Should the microscope be discarded on account of the errors of some of its advocates,—should truth and its pursuit be given up because falsehood and misconception have existed, man might as well abjure his intellect because it is not infallible, and seek the level of the unthinking beast.

Let it not be thought, however, that an apology is meant to be offered for the microscope. Nothing of the kind is needed. If it has been shown that positive advances have been made by means of this instrument, and that the field of its usefulness is not yet cultivated to exhaustion, neither its opponents nor its advocates can demand more.

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* In a recent work on physiology the following language is used:—

"*When we consider, therefore, the constant deceptions of the microscope, especially in all explorations of soft substances, and the absolute uselessness of any knowledge it may convey as to the recesses of organization, it may be reasonably expected that the time is not distant when all this lumber will be excluded from practical works on physiology, and turned, at least, into a channel by itself.*" (Paine's *Institutes of Medicine*, p. 60.)

If this author excluded from his book everything based upon microscopic observation, (as would be expected of any one entertaining such an estimate of the latter,) he could hardly have looked for his readers among the men of the present day; if he did not, there is no slight tinge of unfairness in expressions such as the above. It must surely be surprising to those conversant with the existing state of anatomical science, to find on page 129 of the work just quoted, the assertion, that "*the lacteals have open orifices in the intestinal villi.*" Nor can any one, who has ever studied the circulation microscopically, admit that there is the slightest truth in the statement made as follows, on page 485: "*Irritants of a chemical nature have been applied to delicate membranes, by which their organization is impaired or destroyed, and the blood also coagulated by direct chemical influences. The part has then been subjected to the microscope, under the direct rays of the sun, whose heat has the effect of drying the disorganized tissues, and consolidating the blood.*" How far the author of such remarks is qualified to pronounce sentence upon microscopy, I leave the reader to judge.

What is here claimed as an established proposition is, that the microscope merits a place among the reliable means of medical research. And just as information derived in any other mode, as for instance by observation with the naked eye, must be weighed and analyzed, so must that now in question. Just as an accumulation of facts is essential for the support of any general law in nature, so must it be in minute anatomy and pathology. Every physical law is based upon observed phenomena, error being as much as possible eliminated from such observations; and herein, to a great degree, lies the value of the inductive method of reasoning,—one fact checks another, and the greater the number of concurrent facts, the stronger the compound fact or law derived from them.

Now in studying the phenomena of life, whether in health or in disease, the conditions to be taken into account are extremely numerous, complicated, and variable; and hence, not only is the utmost possible circumspection necessary, but all available means must be brought to bear upon the subject. To overlook or set aside any method of inquiry which can be suitably employed, is simply to detract so much from the solidity of the result, whatever this may be. Wherever the testimony derived from different sources is found to be conflicting, we may be sure that the fault lies either in the incorrectness or incompleteness of our observation of facts, or in the wrong construction placed upon them.

Certain precautions on the part of microscopists and micrographers are absolutely essential, or the claims here asserted must prove untenable.

It must never be forgotten that the microscope is a mere optical instrument, capable only of presenting the image of any object, as if the latter were at a less distance than it really is from the retina. And in estimating the value of any statements based upon its testimony, we must assign it the same position that we should a pair of spectacles; for after all it is the brain which really observes, and to which the eye and the microscope are alike secondary. Precisely as the most thorough anatomist might be utterly ignorant of physiology, so may the microscopist be also; the difference between the physiologist and the mere anatomist being that the one studies the working of the machine, the other its material structure only. Microscopy and the anatomy of gross forms are, however, equally valuable when subjected to the utilizing power—the intellect.

As a corollary to this proposition, we have to remark also that the observations made with this, as with any other optical instrument, are of limited force. Thus, the eye perceives a certain tint of skin in a sick man; this may be of great importance *in connection with other phenomena*, in diagnosis, but taken by itself it is inconclusive. So also the microscope reveals the visible peculiarities of the elements of a tumor, but these are nugatory when unconnected with the clinical history of the case. Hence we must be careful not to overstate our claim,—not to demand for the microscope the credit of powers which it does not and cannot possess.

Microscopic observations should always be made with the utmost care and thoroughness; generally several different portions of the tissue or morbid growth should be examined. Often it is of great use to study the elements not only *in situ*, as in a thin section, but also individually, by breaking them up with needles, or by using sufficient pressure to separate them. To speak here of the employment of reagents would be unnecessary. Perhaps it may also be thought superfluous for me to mention here the absolute necessity of extreme attention to the cleanliness of the glass slides, covers, and other accessories employed.

Accurate records should always be kept of our observations; and correct drawings of the objects viewed are of great value. By one or both of these means of *fixation*, if I may call them so, the experience gained is made available in the highest possible degree. When the elementary forms display a tendency to any particular mode of grouping, this should be carefully noted; and the same may be said of the blood-vessels and nerve-filaments sometimes observed.

If microscopists carry on their work not as mere microscopists, but with a just estimate of the proper value and office of the instrument, with a spirit of earnest and cautious inquiry, seeking only the elaboration of truth, they may confidently look for an ample reward of their efforts. For it is only by such as serve science in this way, that real advances are made; they alone carry out the precept laid down by the highest possible authority,—"Prove all things; hold fast that which is good."

[Mention should have been made, in connection with the general subject of the cell-doctrine, of a paper entitled "The Cell; its Physiology, Pathology and Philosophy," which was published by Dr. Waldo J. Burnett, of Boston, in the Transactions of the American Medical Association for the year 1853. This paper, based upon original observations, forms a valuable addition to micrographic literature.]

ART. III.—*Proceedings of the Pathological Society of Philadelphia.*

Reported by the SECRETARY.

WEDNESDAY EVENING, March 9th, 1859.

The President, DR. LA ROCHE, in the Chair.

DR. ALBERT H. SMITH exhibited several specimens of softening of the brain. One case had during life been attended by pain on motion, but not the slightest feeling was evinced on irritating the skin. A history of the cases was promised for a future meeting.

Congenital Fissure of the Sternum.—DR. DA COSTA read the following paper on the case of MR. GROUX, who had presented himself at a former meeting of the Society:—

The recent visit of Mr. Groux to this city enabled me to study some points connected with the action of the heart, which I beg leave to lay before this Society. The subjoined observations were made on five different occasions, some alone, others in the presence and with the aid of several medical friends.

Mr. Groux is the well-known instance of congenital fissure of the sternum. His history has been so often described that I shall not repeat it here.

The fissure is of a V shape, and covered with skin. At its upper portion, near the second rib, and extending downwards, may be seen a distinctly pulsating mass, which has been thought by some to be the auricle, by others the ventricle, by others again the aorta.

The latter view to me seems untenable. During a full expiration a tumor protrudes through the fissure, the upper part of which is clear, or rather somewhat tympanitic on percussion; at the lower part, corresponding to the seat of distinct movement, there is absolute dullness, and a sense of resistance to the percussing finger. Now, if the parts be normal, is it possible for the aorta to be thus displaced?

The correctness of the second opinion, whether it be ventricle or auricle, is more difficult to determine. I believe the pulsating mass to be auricle, and base the opinion—

First. On its peculiar undulatory movement.

Secondly. On its position, which hardly corresponds to the ventricle.

Thirdly. On the difference in the sound heard over it and the part lower down.

Fourthly. On the time of its beat not being the same as that of the apex, between the fifth and sixth ribs.

Sounds of the Heart.—Presuming then this to be the auricle, the part below it the right ventricle, the one felt beating above it to be the aorta, I instituted comparative observations on the sounds at these different parts, some with an ordinary stethoscope, others with a small glass stethoscope with a flexible tube, and with this adjusted in a Cammann's stethoscope.

At the *aorta*, with a small glass stethoscope placed in the fissure, two distinct sounds are heard. The first is dull, and more like a continuous vibration; the second, a sharp and accentuated sound. Placing my finger immediately below the stethoscope, two vibrations, or if such an expression be permissible, two sounds, are *felt.* The first and longest vibration corresponds to the first or long sound; the second impulse communicated to the finger is short but well defined, and corresponds to the short, flapping second sound.

If the sounds of the aorta be compared with those of the pulmonary artery, it will be found that the second sound of the former is far more distinct than the second sound of the latter listened to in the first and second intercostal spaces near the fissure. The first sound over the two arteries is much alike. That of the aorta seems, however, longer, and is of lower pitch than that of the pulmonary artery.

This diversity between the sounds over the aorta and pulmonary artery is not owing to the absence of the bone permitting the stethoscope to be applied almost immediately to the aorta. To be sure of this, pieces of India-rubber, and then of bone, were placed in the upper part of the fissure. The character of the sounds remained the same, although those of the aorta were not quite as marked as before. The conclusions from this is evident. It is the sound itself which is different, and it is not its passage through the thoracic walls which determines the usual difference in the sounds perceived over the aorta and pulmonary artery.

Over the left *ventricle*, immediately above the apex, the first sound is dull, but marked, the second is ill defined. There is not any material distinction to be recognized between the sounds of the two ventricles. The first sound of the right ventricle listened to at the lower part of the fissure is clearer and less weighty than that of the left ventricle. The first sound at the apex of the heart and that of the aorta, as heard in the fissure, are much alike, excepting that the first sound of the aorta seems duller, and more like a vibration. This comparison was instituted by using two flexible stethoscopes, each retained at its respective place.

If a small stethoscope be placed over the upper part of the point which is thought to be the right auricle, a sound of very peculiar nature is perceived. This *auricular sound* is not always alike. At times it is similar to a soft, rather musical murmur. At other times it conveys to the ear the idea of liquid, as of the stream of a fountain bursting. Or, again, it may be imitated by filliping with the middle finger. Some of this difference is probably owing to the amount of pressure exerted by the stethoscope. The general character of this auricular sound may be thus expressed: it is a continuous sound, on the whole ringing and high pitched. Although continuous, it is not, however, alike at its commencement and at its end—one is of a lower note than the other, and at its termination a click is heard.

This auricular sound stands in marked contrast to the sounds of the surrounding parts. Below it is heard the dull, lower pitched, booming sound of the ventricles. Above it the aorta sends forth its flapping second sound; not unlike that of the auricle, but lacking the somewhat metallic ring this possesses, and, as far as my comparisons went, not of as high a pitch.

There are many points about this sound of interest, and worthy of careful consideration. It is thought to be an absolute demonstration that the movements of the auricles yield an appreciable sound. I confess, although it is heard exactly over the seat of what may be presumed to be the auricle, that I am by no means fully convinced that it is caused by the movements of the auricle, or of the blood in it. I am not quite sure that it is not a valvular sound produced at the tricuspid orifice, and heard so distinctly, because, owing to the malformation, the stethoscope can be placed directly over, or quite near to, the seat of its production. It has, indeed, very much the flapping character of a valvular sound.

The sharp click with which the sound terminates, seems to me hardly to belong to it. It is heard synchronously with the drawing in of the skin over the part supposed to be the auricle. To test if such a sound might be produced at other parts, by the sudden removal of the small glass stethoscope, DR. J. F. MEIGS, with whom several of the examinations of Mr. Groux were made conjointly, applied a small glass stethoscope with flexible tube over several parts of the chest and neck. A sound precisely similar was produced by its sudden withdrawal from the skin.

Effects of the Respiration on the Heart.—The effects of the acts of respiration on the position and sounds of the heart are precisely similar to what I have often observed in other persons. In a full *inspiration* the first sound over the ventricle is lessened, not much over the right, (at the lower portion of the fissure in the sternum,) but very much over the left; the so-called auricular sound disappears entirely. The impulse moves inwards and downwards toward the median line, where it is perceptible to the finger, and also by the distinct motion of pieces of adhesive plaster stuck to the skin. This change of position may be verified by percussion. Near the median line, below the border of the ribs, and below the lower part of the fissure, the previously tympanitic sound becomes dull; but over the seat of previous impulse, between the fifth and sixth ribs, the sound is clear.

In a fixed *expiration* the percussion dullness over the whole heart enlarges. The pulsating mass in the fissure seems to swell. The beat of the heart is felt somewhat higher up, and moves upwards from intercostal space to intercostal space. It is not easy to explain these facts. They are, however, not peculiar to Mr. Groux; I have more than once studied them in lean persons. The probable explanation seems to me to be this: the changed position of the heart in a full expiration causes its beat to be perceived somewhat above its usual seat, and over a larger space. Independently of this, I have been led to conclude from clinical observations, and as the result of vivisections, that during a forced expiration the heart increases in size, and is distended with blood. I have further found that the ventricles are the first to swell. These causes acting together would seem to account for the change of the beat, and its apparent gradual movement upwards.

Impulse of the Heart.—With reference to the much-vexed question of the impulse of the heart, whether produced by the systole or diastole, the phenomena presented by Mr. Groux are susceptible of very varied interpretation.

If a flexible stethoscope be placed in the fissure over the aorta, and a finger be applied to the apex beat, it certainly appears, as far as the touch goes, as if the dull first aortic sound corresponded in time to the impulsion against the finger. But the sphygmoscope shows an undeniable difference in time. The blue fluid over the left ventricle, and the red over the aorta, do not rise synchronously. Repeated observations, made by Dr. Meigs and myself, convinced us of this. It seems to me not unreasonable to suppose that the *two* vibrations, which may be felt with the finger, communicate to the fluid a peculiar double movement,—one from the rush of blood, the other from the flapping of the semilunar valves,—which differs from the single motion of the ventricles. This is rendered still more probable by closely watching the columns of the liquid. The one over the ventricle moves straight and with directness; the one placed on the aorta in a wavy, more broken manner. Whether this explanation be adopted or not, the double vibration over the aorta must certainly be taken into account in reasoning on the results obtained by so delicate an instrument as the sphygmoscope, before we pronounce from its indications either in favor of the systolic or diastolic theory.

The question of the impulse did not, however, engage my attention as closely as the points above enumerated. There is so much to be studied in the case of Mr. Groux, and so much care is required in that study, that I preferred to occupy the opportunities I had of examining him in inquiring into some matters that did not appear to me to have been fully described, but which had in connection with other researches engaged my attention. These observations are, of course, only accurate, provided the position of the heart and of the large arteries is the same in Mr. Groux as in other persons. There is no reason to doubt this. Still, in every case of a similar kind, it may be made a question, whether, if Nature has omitted a sternum, she is not likely to have altered the relations of the parts in the cavity of the chest.

WEDNESDAY EVENING, March 23, 1859.

Vice-President, DR. STILLÉ, in the Chair.

Case of Transposition of Viscera, met with in a patient who died of Phthisis.—Reported by DR. ALBERT H. SMITH.

Joseph Brown, aged thirty, native of England, ostler, entered the Pennsylvania Hospital, on March 3d, 1859. He was emaciated, extremely prostrated, and had marked lividity of the lips and face generally, presenting altogether the appearance of a man almost in articulo mortis. Upon examining him, a loud cavernous respiration, with gurgling, was found at the apex of the left lung, and an absence of respiratory sound at the lower part on that side. Percussion and inspection gave also evidence of an extensive pleuritic effusion, so great as to produce a very marked protuberance posteriorly, and an obliteration of the intercostal spaces. The right lung presented no morbid sign, except a rather rude respiration at the apex. The sounds of the heart were very feeble, but as the patient was so prostrated no very accurate examination was made of the organ, the disease in the lungs being thought sufficient to account for the symptoms. It was, however, remarked that the liver seemed greatly contracted; increased dullness on the left hypochondria was observed, but attracted no particular attention on account of the enormous serous effusion on that side.

Under the use of powerful stimulation he rallied a little; but at no time sufficiently to have warranted a surgical interference for the removal of the fluid in the pleura. On the twelfth of the month he died.

Autopsy.—On opening the thorax the first point of interest was the excessive amount of effusion in the left pleura. There was complete collapse of the left lung, and the whole contents of the thorax were forced over upon the right side of the median line.

On carrying the incision through the abdominal parietes, attention was called to the liver lying upon the left side of the abdomen; a further examination showed that there was a complete transposition of all the thoracic and abdominal viscera, from the innominate artery down to the rectum. The left lung had three lobes, and contained a large cavity in the apex; its pleura was covered with effused and organized lymph. The right lung had two lobes. The heart lay with its apex directed to the right side; the mitral valve and aorta were upon the right, the arch of the latter curving over upon the same side, and sending out the innominate on the left side of the arch. The venæ cavæ were both upon the left side. In the abdominal cavity, on the right side were found the spleen, stomach, descending colon, sigmoid flexure, and rectum; on the left side were the liver, ascending colon, and cæcum. The larger lobe of the liver was upon the left side, though there was much less disparity between the two lobes than usual.

As the examination had to be conducted rapidly, the position of the thoracic duct was overlooked.

DR. HEWSON mentioned a case of similar transposition of the viscera, that had come under his notice. At the autopsy no appreciable cause of death was detected.

Case of Aneurism of the Aorta near the Diaphragm, rupturing into the pleura.—DR. ALBERT H. SMITH next exhibited a specimen of aneurism of the aorta.

Archibald Wilkinson, aged twenty-eight, native of Ireland, waiter, entered the Pennsylvania Hospital, March 11, 1859. The history he gave of himself was as follows: About eighteen months since he was in perfect health, having been so for ten years, previous to which he had suffered from an attack of what he called disease of the liver. At the period first mentioned he began to experience loss of appetite, indigestion, occasionally shortness of breath after violent exercise, headache, with a vague sense of uneasiness referred to the epigastrium. These symptoms did not at any time interfere with his occupation, which was not one attended with any great fatigue, until about six months since, when they increased with so much vehemence as to require him to abstain from all exertion. About this time the feeling in the epigastrium became a positive pain, of a sharp, paroxysmal character, much more severe at night. All of the symptoms above mentioned were aggravated; he became emaciated, his appetite left him, he passed sleepless nights, suffered from great mental depression, and was altogether extremely miserable.

When admitted into the Hospital, he was quite feeble, emaciated, having a sallow complexion, and a very haggard, anxious expression of face. He complained of pain in the epigastrium, as mentioned above, and also of occasional pains in the loins and down the legs. He was obstinately constipated. Auscultation and percussion detected no abnormal condition of the lungs or heart. The liver extended considerably below the ribs, and was slightly tender on pressure. In the epigastrium was found, by moderate pressure, a large pulsating tumor, quite apparent to the eye on account of the general emaciation, and both from its producing a prominence and from its pulsation being felt immediately over the vertebral column. On placing the ear over the tumor a very loud murmur could be readily heard, extending for a short distance above the pulsating mass, and downward as far as the bifurcation of the aorta. The urine was highly charged with oxalate of lime crystals.

By means of palliatives his condition was greatly improved; his appetite increased, he slept well, and stated that he felt more comfortable than he had felt for many months. On the morning of the nineteenth, eight days after admission, he was sitting at the head of his bed shaving himself, having used no greater exertion than that of dressing slowly, when he suddenly groaned, rose up from the chair, and fell immediately. He was placed upon the bed, and I saw him about two minutes after. His respiration had then ceased entirely, the pulse at the wrist was not perceptible, though the impulse of the heart could be felt distinctly for more than five minutes after I saw him. Galvanism and powerful stimulation failed to resuscitate him in the least.

The autopsy was made about twelve hours after death. On opening the thorax, both lungs were found completely collapsed, and floating in about a gallon of bloody serum. Raising the right lung, we discovered a firm coagulum of red blood which had formed an exact mould of the pleural cavity, and was so thoroughly coagulated that it could be lifted out entire and weighed; its weight was a little over four pounds and a half. There was no hemorrhage into the peritoneum. The entire thoracic and abdominal viscera were then carefully removed, and the course of the aorta exposed. Just at the position of the diaphragmatic crura was found a sac extending about five inches in length from the lower part of the eleventh dorsal to the upper portion of the third lumbar vertebra, being thus bisected by the diaphragm and constituting a thoracico-abdominal aneurism. On the right side, near the summit of the sac, was an aperture the size of a half dime, through which it had discharged the contents of the aorta into the right pleural cavity. The aorta was then carefully dissected away from the arch to the iliac bifurcation, the diaphragm being detached and removed with it. Over the last dorsal and first two lumbar vertebræ its coats were entirely obliterated, and the bodies of these bones were absorbed to about one-sixth of their extent, the intervertebral substance remaining unaffected. The aneurism was a false, sacculated one; the channel of the aorta continued without change in its calibre except at a point over the first lumbar vertebra, where there was an opening about half an inch in diameter into a sac—which could contain over eight ounces—extending in both directions above and below the orifice of communication. The disease had originated in the inner coat, the external being unimpaired except at the point of rupture, around which the walls were attenuated. The aorta, in its entire course, was studded with patches of atheromatous deposit. The heart was free from any evidence of disease, as also were the lungs. The liver was somewhat enlarged and congested. The colon, from about the middle of the transverse portion down to the sigmoid flexure, was narrowed to a size less than that of the small intestines; there was slight thickening of the coats but no further evidence of disease; above the position at which the diminution of calibre began, the colon was distended to about twice its normal size.

The patient had been, during his whole stay in the Hospital, free from all excitement or exertion; the action of his heart was very tranquil, and the operation he was going through at the time of his death could not, certainly, have increased its force or frequency. The rupture was evidently caused by the contraction of the diaphragm over the middle of the tumor during the act of respiration.

DR. STILLÉ drew attention to the increasing frequency of aneurism. The cause of this is perhaps to be referred to the increasing frequency in the use of alcoholic drinks as suggested by Huss.

Small Cancer of the Mammary Gland.—DR. GROSS presented a cancer of the mammary gland, not larger than an English walnut, which he had removed from a patient sixty-four years of age. The disease had existed apparently for about two years. The tumor was hard and dense, but contained under the microscope the elements of cancer. Dr. Gross drew the attention of the Society to the small size of the cancer. He had met with but few instances of such small cancerous tumors of the breast.

DR. WOODWARD stated that several of such cases had come under his observation.

Calcareous Deposits on the Pleura.—DR. WOODWARD exhibited a pleura loaded with calcareous deposits, or as it is more usually termed, an ossification of the pleura. The membrane was more than the one-eighth of an inch in thickness, and the deposit of calcareous matter involved its entire substance. A microscopical examination revealed the elements of connective tissue, and numerous granules. On the addition of acetic acid, a free escape of carbonic acid took place.

Tubercle deposited upon the Mucous Membrane of the Colon and Ileum, in the Mesenteric, Meso-colic and Meso-rectal Glands, and in the Pineal Gland.—Presented by DR. PACKARD.

T. R. W., aged nearly six years, was attacked with dysenteric symptoms on the twelfth of March. I saw him on the fifteenth. He had been liable to attacks of this kind, or as his mother expressed it, "his bowels had been weak" from early infancy.

The child was always very smart and precocious; had a very large head, light hair, pale blue eyes, and a clear complexion; his mother presents the same physical appearances.

A tendency to stupor which showed itself during the first day or two of my attendance, I ascribed to a mixture containing opium, which had been given him to check his diarrhœa. His pulse ranged from 130 to 150 in the minute; his stomach was irritable to an excessive degree, and his bowels were moved about once in fifteen or twenty minutes. No tympanites existed, nor was there any notable tenderness at any portion of the abdomen. Some gurgling was at times produced by pressure over the right iliac fossa.

The stools were bloody, small, and full of lumps like flesh-washings; there was more pain just before than during their expulsion.

The excessive irritability of the stomach and rectum, which lasted throughout the whole course of the disease, precluded the use of internal remedies. Active counter-irritation to the extremities, and fomentations to the abdomen, were the chief available means.

The symptoms amended somewhat for a day or two; the stools became more natural and rather less frequent, and the slight headache which had troubled the child passed off. No diminution of the irritability of the stomach and rectum could, however, be perceived, and there was a good deal of restlessness and even delirium at night.

At my morning visit on the eighteenth, he seemed a little better in every way; but at noon I was sent for, and found him in a strong convulsion, his surface pale and cold, and his sight gone; pupils dilated and somewhat unequal. By active stimulation and counter-irritation, he was brought out of this state, but sank and died in about three hours.

With the assistance of Dr. Wurts, I made the autopsy, forty-three hours after death: Body very much emaciated. *Head* and *abdomen* only examined.

Skull very large, and well-shaped. Bones thin, and almost entirely without diploë. Dura mater adherent to the calvarium. The brain was large and heavy, and much congested, as were also the arachnoid and pia mater; but no abnormal condition of any portion of it was noted, except the very great softness of the pineal gland. The ventricles contained a very little bloody serum, and about f℥ij escaped from the subarachnoid space. The fifth ventricle was extremely large.

The colon being laid open, its inner surface presented a reddish tinge throughout, owing to the diffusion over it of minute points of vascularity. Its appearance was also somewhat villous, from a soft deposit with which it was covered. Similar conditions were observed in the ileum, and the increased vascularity was especially noticeable in the glands of Peyer.

The lymphatic glands of the mesentery, meso-colon, and meso-rectum, were in a state of great enlargement.

Upon placing under the microscope portions of the pineal gland, of the deposit alluded to as found on the mucous surface of the colon and ileum, and of the mesenteric glands, the peculiar corpuscles of tubercle were at once detected.

Nothing abnormal was observed in any of the other organs.

The hygienic circumstances by which this child had always been surrounded were very favorable; he was well clothed and fed, and in every way well cared for; no disease of any kind seems to have prevailed either in his father's family or his mother's. An older child died several years ago at two years of age, with symptoms which I judge from the account given by the parents to have been analogous to those in the present case; and a younger one is said to be liable to similar attacks of diarrhœa.

The very excessive irritability of the entire alimentary canal, from the outset to the close of the disorder, does not seem to me to be accounted for by the lesions discovered after death, although it would of course have been amply explained had the brain been more extensively diseased.

Intra-uterine Fracture of the Clavicle.—Dr. Keller reported the following case.

Mrs. H., of Philadelphia, twenty-seven years of age, became pregnant for the fifth time about the twentieth of December, 1857. Although not robust, she is not of a weakly constitution, and enjoyed, as previously, good health in the first months of her pregnancy.

On riding out in a light carriage, toward the middle of April, she met with an accident. One of the hind-wheels broke off at the axle, and she, leaning forward, fell upon the front wheel so that she injured herself externally on the right side of the abdomen.

She experienced, however, no further disagreeable consequences, and on the first of May felt, for the first time clearly, the motions of the child. In the middle of June she had, without any apparent cause, a severe hemorrhage from the womb, which lasted one day and then ceased entirely.

During the last two months of her pregnancy she felt frequently unwell, and often suffered from pains resembling spasms of the womb. On the twenty-first of September, after several hours of normal pains, she was delivered of a healthy girl. Three days afterwards, the nurse pointed out to me a striking swelling on the neck of the child, which, upon careful examination, I recognized as a completely consolidated fracture of the middle of the clavicle, of which the exterior half stood upward and outward, joined behind in an obtuse angle to the rest of the bone. In an erect position of the body only a very slight deformity was visible, but when the head was much turned it became very apparent.

Considerable discussion followed the report of this case. It was suggested whether the swelling might not have been a morbid growth involving, or springing from the bone.

DR. KELLER could positively affirm that such was not the case. The child was in excellent health, and the deformity so precisely like that resulting from a fractured clavicle that there seemed to him no room for doubt.

DR. PACKARD spoke of the exceeding rarity of such fractures. He could find but one case of intra-uterine fracture of the clavicle reported, that referred to by Malgaigne.

DR. GROSS mentioned the instance placed on record by Glockengiesser, where one hundred and thirty fractures existed in the same fœtus.

Report of the Committee on the Small-sized Kidney exhibited by DR. HODGE.—The Committee appointed at the last meeting but one of the Society, to examine the specimen exhibited by Dr. Lenox Hodge, (*see page* 202 *of Proceedings*,) would respectfully report that they placed a portion of the small body, concerning the renal structure of which doubt existed, under the microscope; and that they found in it the tubular character of a normal kidney.

JOHN H. PACKARD,
WILLIAM A. HAMMOND.

WEDNESDAY EVENING, April 13th, 1859.

Vice-President, DR. STILLÉ, in the Chair.

DR. HUTCHINSON exhibited a specimen of fracture of the parietal bone with rupture of the middle meningeal artery, accompanied by extensive extravasation of blood upon the surface of the brain.

Depressed Fracture of Skull.—DR. LENOX HODGE presented a specimen of depressed fracture of the skull. The man, from whom the specimen was taken, died a few hours after he was brought to the Pennsylvania Hospital, suffering from the effects of a railroad accident.

The base of the skull was fractured, directly across from the petrous portion of one temporal bone to the other; and a depressed fracture of about two inches in length existed in the parietal bones, crossing the sagittal suture, a little above the occipital bone. This specimen shows the tendency of the internal table to exhibit a more extended fracture, and a more marked depression than that indicated by the external table. To test the reality of this difference, it was suggested to me to take a plaster mould of the injury of the external table. I did so; and the difference appeared still more marked, when an elevation was compared with an elevation at the same time, and not an elevated surface with a depressed surface at different times.

The Secretary presented, for DR. JOHN K. KANE, a specimen and the history of a *case of Mitral Disease, accompanied by a musical sound, together with hypertrophy of both ventricles, without dilatation, and perhaps even with contraction of the cavities.*—John O'Brien, a white boy, aged seventeen years, was a native of Philadelphia, and had always resided there. For some months back he had been an inmate of the House of Refuge, from which institution he had been discharged on account of illness. About seven years before he had a severe inflammatory rheumatism; ever since then had been subject to palpitations of the heart, and also to attacks of dropsy.

When I saw him, for the first time, on the fourth of March last, he was complaining of cough, pains in the abdomen, and dysentery. He was lying in bed, very pale, with a hot, dry skin, and had as many as from ten to thirteen stools per diem. The discharges were composed of blood and mucus, with little or no odor. His abdomen was slightly tender on pressure, but not swelled; his face and eyelids, however, were puffy, and his penis and scrotum were highly œdematous. The heart's action appeared tumultuous and irregular, but the pain in the abdomen and extreme weakness were such, that it was not until three days afterwards that I was enabled to make a critical examination into the state of that organ. The abdominal pain and dysenteric discharge ceased almost immediately under the influence of calomel and opium; but they were followed by an enormous effusion of serum, the penis and scrotum becoming tense with fluid; the eyelids more puffed; the legs œdematous; and the abdomen much distended.

On the seventh of March, the patient appearing better and stronger, I availed myself of the opportunity to examine into the condition of his thoracic viscera, and obtained the following results:—On inspection, I found great bulging of the left side, the intercostal spaces being widened, but not bulged. A little below the axilla of the left side there was a distinct depression of about three inches in diameter. The impulse of the heart, described more particularly hereafter, was also observable. Auscultation detected subcrepitant and coarse sibilant râles throughout both lungs. Percussion produced a clear sound over both lungs as low down as the fourth rib; but below this the sound became dull over both. The dullness, however, was more marked, and the resistance to the finger greater, on the left than on the right side. The cough was at times severe. The expectoration was thick, and of a whitish color. Owing to the great amount of effusion it was impossible to define the heart's limits by percussion, except to the right superiorly, where a distinct dullness was perceptible at the third interspace, three-fourths of an inch to the outside of the right border of the sternum. The impulse was tumultuous, strong, and wavy, and caused such a fluctuation in the mass of fluid contained in the abdomen as made it distinctly visible throughout its whole extent. It was most marked, however, at a point three inches below, and a little to the outside of the left nipple, where two distinct impulses could be seen and felt, one slightly above and a little after the other. The rhythm was exceedingly irregular; the average number of beats to the minute was one hundred and fifty-six. On listening over the left side a peculiar blowing sound was heard, a prolonged whiff, winding up a with a clear musical note, a sol. This sound, or rather these sounds, were loudest at the point of strongest visible impulse, leading to the belief that the mitral orifice was the seat of their production; they could be heard, however, with slight loss of clearness at the aortic cartilage, and more faintly over the whole of the heart's extent. They were apparently coincident with the systole, but the heart's action was so tumultuous and irregular, that it was impossible to say, with certainty, that such was the case. It was equally impossible to determine whether the sounds heard at the aortic cartilage were altogether transmitted from the mitral valves, or whether there was not also some aortic disease. I rather inclined to the latter opinion. Careful auscultation over the third left cartilage and ensiform appendix gave no reason to suspect any valvular disease on the right side of the heart. In both places a clear first and second sound could be distinguished, together with a faint transmitted murmur from the left side. There were no arterial or venous murmurs. The pulse at the wrist was so feeble and irregular that I was unable to ascertain whether it coincided with the heart's impulse or not. The patient complained of inability to lie except on his back, and though he never had pain over the region of the heart, he had frequent palpitations, attended by a sense of suffocation. His urine, which was scanty, and of a pale straw color, assumed a thick curdy appearance on being subjected to the action of heat or nitric acid. His gums were swollen, of a pale blue color, and apt to bleed. His tongue was coated at the centre with a yellow fur, the edges being slimy, and of a bluish tint. His appetite was capricious and weak, and he often suffered from nausea. This last was, no doubt, due in part to the quantities of acidulated liquids which he was in the habit of swallowing, and for which his thirst appeared insatiable. My diagnosis was hypertrophy of both ventricles, together with mitral insufficiency and aortic constriction. I thought it probable also that there were old pericardiac adhesions, and there was certainly coexistent Bright's disease of the kidneys.

My friend, DR. DA COSTA, who was kind enough to visit the case with me two days afterwards, was of the same opinion, but suggested that there might also be constriction of the mitral orifice, as well as insufficiency of its valves.

The treatment of this case was necessarily limited, owing to the weakness of the patient, and his tendency to nausea. A variety of diuretics were tried and discarded. Most of them merely sickened him, while those that were free from this objection appeared to lose their efficacy after a few days. I finally fell back on lemon-juice and the simple carbonated water of the shops, which seemed to be quite as effective, and were certainly much more palatable than any others. With regard to sedatives to allay the heart's action, the same difficulty existed,—digitalis and aconite caused emesis before affecting the heart. Belladonna plasters placed over the cardiac region would influence it favorably for a few hours, but after that they lost their influence. As a temporary relief during palpitation, I found a rag wet with chloroform, and applied over the heart, beneficial. Pains in the lower limbs, referable to œdema, were treated by bandaging, and rubbing with a chloroform liniment. Warm baths, simple expectorants to relieve his cough, and nitromuriatic acid as a tonic, with, now and then, a mild cathartic; these made up the general treatment which I adopted. The symptoms varied but little during the first three weeks of my observations; of course, the amount of œdema was less on some days than others, but it was not until the twenty-third of March that I saw any marked change in the patient's general condition. On the morning of this day, when I paid my visit, I found him dull, sleepy, and feverish; his face, which had all along been pale, was flushed, and his eyes glazed. The action of his heart was more than usually violent, and the blowing sound, with its musical termination, remarkably well defined. He slept heavily all that day until about six in the afternoon, when he was taken with a profuse bleeding at the nose, which lasted half an hour, and was arrested with difficulty. He seemed relieved after this, and when I paid my evening visit, at half-past seven o'clock, he expressed himself as feeling more comfortable than he had done for some days past. His skin was pleasantly cool and moist, and his heart beating more tranquilly. He slept well that night, but on the following morning had several attacks of weakness and partial syncope. When I saw him, however, about ten A.M., he appeared better, his pulse was not weaker, and his heart was more tranquil than usual. He said he felt well and hungry. On listening to the heart's sounds, I was struck by the fact that the musical note, which had remained constant, and which had been more than usually marked the day before, had gone entirely. It never returned. The blowing sound, however, remained, and continued not perceptibly altered in pitch until the end of the case. The patient continued better until the third day after this, when he had a recurrence of the attacks of weakness. From that time he grew weaker, and his dropsy steadily increased. On the third of April, his nurse informed me that he had involuntary evacuations from his bowels. On the morning of the fourth of April, I noticed him picking at his bedclothes in a nervous, undecided manner. That evening I was sent for in a hurry. I reached the house at eight o'clock, and found him very weak, gasping for breath, and complaining of dreadful pain in his limbs. It was evident from his expression of countenance that death was coming on. He fell asleep, however, under the influence of anodynes, and continued sleeping until about one A.M., when he awoke, exclaiming that he was dying. At about two A.M., he again fell into a doze, which continued until it lapsed into death, at five o'clock in the morning of the fifth of April.

A post-mortem examination was made five hours after death, in which I was assisted by DR. DA COSTA and one of his students. There was great general emaciation, but owing to the large amount of dropsical effusion, it was not until we cut into the integuments that it became evident. Before being opened the body was much swelled, and the legs discolored. On opening the chest a quantity of serous fluid escaped. Both lungs were much compressed, the left more than the right, and old resistant adhesions were found throughout the whole extent of both pleuræ. The pericardium was so adherent to the pleura of the left lung that it was very difficult to separate them. On removing the heart in its pericardium from the body, the two surfaces of the pericardium were discovered to be universally adherent to each other, and on cutting into the heart itself, both ventricles had the appearance of being *concentrically* hypertrophied. Further examination of the organ was postponed until post-mortem rigors should have time to subside. On the examination being continued, sixty hours after death, we found the wall of the right ventricle to be as much as one and one-third inches in thickness, its columnæ carneæ being enormously developed. On measuring the transverse diameter of the cavity of the right ventricle at its widest portion, we found the distance from wall to septum to be one and one-third inches. The walls of the left ventricle were not so extensively hypertrophied as those of the right. They were much more so in the neighborhood of the mitral orifice than elsewhere. A measurement taken just below this point gave as much as three-fourths of an inch in thickness, while lower down they measured not quite half an inch. The columnæ carneæ, too, though larger than normal, bore no proportion to those of the right ventricle. The greatest transverse diameter of the left ventricle from wall to septum was one and three-quarter inches. The pulmonary and tricuspid valves and orifices we found to be normal. On examining the mitral opening we found the orifice itself constricted, and the valves thickened and insufficient. The aortic orifice was constricted, and its valves, though insufficient to close it, were considerably thickened. Both auricles were apparently normal, though clots of considerable size were found in both; the right being almost entirely filled by a non-adherent clot, while the left contained a large adherent clot of elongated shape which had its origin directly at the mitral orifice.

The symptoms in this case have been detailed.

The post-mortem examination having verified the diagnosis, it might seem a work of supererogation to designate the particular indications which led to the different diagnostic conclusions. I may venture, however, to invite attention to two points, which seem to me to be worthy of more than a merely passing notice. The first, the fact of two impulses being visible at the point of apex beat taken in connection with the extensive agglutination of the pericardial surfaces. There were other reasons which led me to suspect the existence of pericardial adhesions. The fact of the præcordial interspaces not being bulged, while there was evidently so great an amount of effusion into the cavity of the thorax. The extreme lowness of the point of apex beat, notwithstanding the great abdominal distention, and the knowledge of the previous attack of inflammatory rheumatism already referred to, followed by palpitations, all looked in that direction; the strong double impulse settled the point to a certainty. The second point, for which I would ask consideration, is the musical sound which was produced at the mitral orifice, and which so suddenly disappeared. The action of the heart was so tumultuous that it was impossible to say whether it was coincident with the systole or diastole of the ventricles, and yet its existence caused Dr. Da Costa to suspect constriction of the mitral orifice, as well as disease of the valves. The reason he gave was, that in all the cases of purely cardiac musical sounds which had come under his notice, constriction had been present. The post-mortem results showed this actually to be the case. I am, therefore, constrained to believe that the musical note, which was of very short duration, was not a mere termination of the regurgitant blowing sound, but rather a distinct sound caused by the blood passing through the constricted orifice, and coincident with the diastole of the ventricles. What was its mechanism, and why it ceased, it would be difficult to say. Perhaps a shred of vibratile lymph was its cause, and this being suddenly swept away, or gradually thickened by fresh deposits, the sound was no longer produced. Another hypothesis equally plausible and equally insusceptible of proof, is, that the sound was produced by the resisting edges of the constricted orifice vibrating in the current of the blood, and that these, for some reason, (increased thickening, for instance,) lost their musical resonance. Perhaps the adherent clot found after death in the left auricle, was the cause of its cessation, either by altering the direction of the current, or otherwise.

The heart was referred, for further examination, to a committee.

WEDNESDAY EVENING, April 27th, 1859.

Vice-President, DR. STILLÉ, in the Chair.

Pericarditis, and alteration of the Valves of the Heart.—DR. HALL exhibited a specimen of Pericarditis, accompanied by changes in the valves, removed by him from a patient of Dr. Martin; the man was about fifty years of age, and had suffered for years from rheumatism.

The symptoms were those usual to the disease. The physical signs were as follows:—

Dullness over the region of the heart, the limits much increased, and the sound flat. Friction sound, with a thrill to the hand or ear, below the left nipple. A murmur during both systole and diastole, was heard loudly over the heart and arteries, and moderately over nearly the whole anterior part of the thorax and in the carotids. The normal sounds were both absent or entirely obscured by the murmur. This was heard most clearly over the aortic valves, and from there it was transmitted down toward the apex.

Post-mortem examination.—The head was not examined. There was a large effusion into the right pleural cavity, with bands of highly organized lymph lining the pleura. The lungs were highly congested at their base, but were otherwise healthy. The pericardium was distended, with about five ounces of amber-colored serum; there were one or two small patches of lymph upon the pericardial surface of the heart. Measurements taken on the spot showed the heart to be affected with eccentric hypertrophy, being enlarged in both diameters. The aortic and mitral valves were thicker than natural, but no decided disease appeared—not so much as was expected. A very small patch of atheromatous deposit was found on one of the curtains of the aortic valves. The right side of the heart was healthy. There was no disease of the kidneys.

The blowing sounds over the aortic valves were, Dr. Hall thought, to be accounted for by the presence of considerable dilatation of the ascending aorta, producing an inaccurate closure of the valves. There was not sufficient change in the structure of the valves to have originated a murmur. Nor was it caused by impoverished blood, since the man did not look in the least degree anæmic.

Multilocular Ovarian Cyst.—Presented by DR. HUTCHINSON.

The patient had been tapped during life and an enormous quantity of a tenacious albuminous fluid discharged. The cyst filled the whole abdomen. It sprang from one ovary; the other was healthy, but perhaps somewhat harder than natural.

Report of the Committee on the Heart, presented by DR. KANE.—The committee appointed to examine the specimen of supposed concentric hypertrophy of the heart, presented to the Society at its last meeting by Dr. John K. Kane, respectfully report:—

That owing to the fact that the specimen above mentioned had, when submitted to examination, been a lengthened period in alcohol, and was, moreover, greatly mutilated by previous examinations, the committee hesitate to express a decided opinion from personal inspection and measurement. Taking, however, into consideration the careful measurements made by Dr. Kane and recorded in the paper accompanying the specimen in question, and comparing them with numerous measurements made by other observers of normal adult hearts, there does not seem scarcely a doubt of the existence of concentric hypertrophy in the case under consideration.

The committee would refer to the following table of M. Bizot,* showing the capacity of the human heart:—

LEFT VENTRICLE—MALE.

AGE.	LENGTH.	BREADTH.
1 to 4 years	20 lines.	31 lines.
50 to 79 "	36 "	$56\frac{2}{3}$ "
Average, from 15 to 79 years	$34\frac{24}{61}$ "	$54\frac{9}{61}$ "

LEFT VENTRICLE—FEMALE.

1 to 4 years	$18\frac{1}{2}$ lines.	$29\frac{5}{8}$ lines.
50 to 79 "	31 "	$49\frac{1}{2}$ "
Average, from 15 to 89 years	$31\frac{1}{30}$ "	$48\frac{23}{30}$ "

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* Cyclopedia of Anatomy and Physiology, art. *Heart*, vol. ii. p. 586.

RIGHT VENTRICLE—MALE.

1 to 4 years	$20\frac{1}{5}$ lines.	$47\frac{4}{5}$ lines.
50 to 79 "	$37\frac{1}{3}$ "	87 "
Average, from 15 to 79 years . .	$57\frac{14}{61}$ "	$82\frac{11}{66}$ "

RIGHT VENTRICLE—FEMALE.

1 to 4 years	$18\frac{7}{8}$ lines.	$44\frac{1}{8}$ lines.
50 to 79 "	$35\frac{11}{19}$ "	76 "
Average, from 15 to 89 years . .	34 "	$76\frac{3}{8}$ "

WILLIAM A. HAMMOND,
ROBERT P. HARRIS.

WEDNESDAY EVENING, May 11, 1859.

The President, DR. LA ROCHE, in the Chair.

Gunshot Wound of Neck.—Presented by DR. LENOX HODGE.

J. McC., about thirty years of age, was brought to the Pennsylvania Hospital on the afternoon of Friday, April 29. He had a gunshot wound of the neck. The wound of entrance was on the middle line in front, and over the lower part of the larynx. There was no wound of exit. Respiration had already ceased, but his heart was still beating, the pulse being full and slow, about thirty in a minute. The surface was pallid. A small clot of blood lay on his chest.

Artificial respiration appeared to produce no effect. Thinking that there might be some impediment to the passage of air through the larynx, I enlarged the wound downward, and inserted a tracheotomy-tube. Through this we could readily force the air, but still failed to restore the respiration.

Upon making the post-mortem examination we found that the ball having fractured the cricoid and thyroid cartilages, had passed directly through the larynx and œsophagus, and struck the body of the sixth cervical vertebra; then glancing a little to the right it had torn away a portion of the bone, passed between the transverse processes of the sixth and seventh cervical vertebræ, and lay imbedded in the muscles on the back of the neck. Upon opening the larynx, we saw that in addition to the fractures the mucous membrane was much torn from its attachments, and fell like a valve; and that several small coagula of blood were present. The trachea and bronchia contained no coagula, but a little fluid blood. The membranes of the spinal cord were deeply congested where the ball passed near them, but there seemed to be no solution of continuity. In examining the other organs, we saw nothing worthy of note in this connection.

The point of special interest in the case is, to determine the exact cause of death; was it the injury to the larynx or to the spinal marrow, or both, conjointly, or perhaps still other causes which occasioned it?

Dr. Hammond stated that a case had come under his notice in New Mexico, where a slug fired from a smooth-bored gun in the hands of an Indian, at a distance of about two hundred yards, split upon the anterior portion of the thyroid cartilage, into two pieces of unequal size, which passed under the skin and made two orifices of exit. One of these was a little posterior to the left ear; the other on the right side, about an inch from the cervical vertebræ. The exact shape of the slug could not be determined, but as Indians are in the habit of chewing their slugs into shape, he judged from those he had seen which had been thus formed that it was an irregular ovoid, three-quarters of an inch in the long, by half an inch in the short diameter. Dr. Hammond further stated that Indians shoot with small charges of powder, which might tend somewhat to account for the fact of the ball not having entered the cartilage. He also alluded to a case reported to him by another medical officer of the army, in which a musket ball had split upon the nasal bones, the pieces entering the eyes.

Dr. La Roche made the following communication:—

The medical profession of this city have very lately sustained a severe loss by the death of Dr. Henry Bond, who for about forty years enjoyed among us the well-merited reputation of a judicious practitioner and honorable and high-minded gentleman. He died on the fourth of May last, in the seventieth year of his age.

As Dr. Bond was not a member of this Society, I should not have called attention to the circumstance of his death, had not the disease under which he labored and which finally carried him off, and particularly the morbid appearances discovered on inspection of his body, presented some points of interest.

For some twelve or fifteen years prior to his death, he labored under the usual symptoms of hypertrophy and valvular disease of the heart. About eight or ten months ago, while walking in the Washington Square, he fell to the ground under an attack of apoplexy, and was thence carried to his house, where, under the use of judicious remedies prescribed by Drs. Bell and Hoyt, who in my absence from home were summoned to his assistance, he soon recovered his consciousness. The consequence of the attack was paralysis—almost complete—of the whole left side of the body, as also the organ of speech. From this condition—in which I found him at my first visit with Dr. Bell, who continued to attend him—he in a great measure and rather rapidly recovered; sufficiently so, indeed, to be able to raise his hand and arm with a certain degree of facility, and to walk in and out of doors without assistance, and with little more than a moderate drag of the affected foot. The muscles of his face presented slight evidence of the nature of the disease. His articulation was somewhat thick, slow, and indistinct; the pitch of his voice low, and the force of the sound so feeble as to require the closest attention on the part of those near him to enable him to be understood. His mind appeared clear, though giving evidence from day to day of a tendency to a gradual loss of strength.

On election day he walked out alone to cast his vote, and passed the day as usual, without indicating any sign of increasing disease. He played a game of backgammon with a friend in the evening, remained in conversation with the family until after ten o'clock, when he retired to bed. The next morning, between six and seven o'clock, he was found by his servant, dead on the floor of his chamber. He was lying on his left side, near the bed. His extremities were cold, but relaxed. On the forehead, just over the left eye, was a cut and contusion, surrounded by blood, evidently produced by his striking, in falling, the edge of a bureau situated near the bed. The clothes on the latter were scarcely deranged.

The autopsy was made thirty hours after death, by Dr. Brinton, in presence of Drs. Bell, Wood, Coates, Condie, C. P. La Roche, and myself, and revealed the following appearances:—Occipital protuberance uncommonly prominent, with corresponding thickness of bone. The entire surface of the brain exhibited great venous congestion. The arachnoid membrane, especially toward the summit of the brain, was decidedly opake, with effusion beneath it of a serous fluid, and in patches, of a semi-gelatinous matter. The vessels at the base of the brain were all more or less ossified. In cutting into the substance of the brain, the medullary matter became immediately covered with innumerable small spots of red blood. The choroid plexus was considerably congested. A large amount of serous effusion—probably two ounces—was contained in the lateral and other ventricles. The hippocampus major of the right side was unusually large, infiltrated with fluid, and decidedly softened. The velum interpositum was strongly injected with blood. The substance of the medullary portion of the anterior lobe of the right side of the cerebrum was considerably softened and injected with a pus-like fluid, the softening extending as far back as the descending cornua. The cerebrum was large in size and firm in texture; the convolutions were uncommonly deep. The cerebellum was, compared with the cerebrum, uncommonly small in size; it was congested, but less so than the cerebrum. The cartilages of the ribs were ossified. Old adhesions of the left lung to the costal pleura were discovered. Considerable effusion into the cavity of the pericardium existed. The right auricle contained a very large amount of fluid blood.

The heart was much above the medium size, and on its surface were to be seen large deposits of fatty matter. The coats of the aorta exhibited ossific deposits. The left ventricle was considerably hypertrophied and thickened; the right nearly natural. The semilunar and mitral valves were, especially at the base, thickened and ossified.

The changes found in the heart confirmed fully the opinion which had long been expressed of the nature of the disease of that organ under which Dr. Bond labored so many years. Those found in the brain were sufficient to account for the attack of apoplexy and paralysis. In consequence of not finding in the latter organ any marks of recent disease of a kind calculated to explain the sudden death of the patient, and in view of the nature of the morbid changes in the heart and of the unusual accumulation of blood found in the right auricle and surrounding vessels, several of those present at the autopsy were inclined to look to that organ for the immediate cause of death.

WEDNESDAY EVENING, May 25th, 1859.

Vice-President, DR. STILLÉ, in the Chair.

Four Cases of Wounds of the Liver.—Presented by DR. GEORGE C. HARLAN.

CASE I.—The specimens on the table were taken from a man killed yesterday afternoon by a fall. He fell from a height of three stories from a ladder. At the time of his admission into the Hospital he was entirely insensible, the respiration was labored, the pulse frequent and full, the pupils contracted, and blood was flowing freely from both ears. There was no reaction, and he died in about half an hour.

A post-mortem examination revealed an extensive fracture of the base of the skull, involving the occiput on both sides of the foramen magnum and the petrous portion of both temporal bones. On the left side of the occiput the separation was wide enough to allow the blade of a large scalpel to be readily introduced into the fissure. There was some blood at the base of the brain, but no clot. The blood had continued to flow from the ear for some time after death. There were lacerations of the cerebellum corresponding in position and extent to the fissures in the occiput. The liver was also injured. There was a laceration on the upper surface of the right lobe, about four inches in length and one-eighth of an inch in depth, presenting an irregular, granular appearance. There were two or three ounces of effused blood in the peritoneal cavity, but no external marks on the abdomen. This is the fourth case of rupture of the liver that has occurred in the Pennsylvania Hospital within the last two months, and as illustrating the frequency of this injury in hospital practice, it may be worth while to give a brief account of the three others.

CASE II.—A few weeks ago an old man was admitted into the Hospital, with injuries inflicted by a railroad accident. The accident occurred at Paoli, twenty miles distant, and when he reached the Hospital he was very much exhausted, and almost pulseless. Though terribly injured he was perfectly conscious, and complained most of dyspnœa and pain in the abdomen. He died in about an hour. Several ribs were found to be broken, the right lung was torn, and there were compound fractures of the leg and arm. There was upwards of a pint of effused blood in the peritoneal cavity. The liver was ruptured in more than twenty places. The lacerations were from an inch to four or five inches in length, and their greatest depth was about a quarter of an inch. They had occurred principally on the right lobe, and occupied both the upper and under surfaces. No signs of external injury of the abdomen were detected.

Of the other two cases, one occurred in Dr. Hutchinson's ward, and he has furnished me with the following notes:—

CASE III.—A man was brought to the Pennsylvania Hospital during the last week of March, having met with serious injuries in consequence of his wagon and a train of cars having come into collision. The man was evidently dying at the time of his admission, about an hour after the accident had occurred, and no very thorough examination was attempted. Death took place in less than three-quarters of an hour.

An autopsy made thirteen hours afterwards revealed an extensive fracture of the skull, also of the three lower true ribs of the left side. The peritoneal cavity contained about four ounces of blood. Upon the upper surface of the left lobe of the liver, at its extreme border, was a stellated rupture, about three-quarters of an inch at the deepest part. The diaphragm was not ruptured; nor was there an external injury in the region of the liver.

For the notes of the fourth case I am indebted to Dr. Hodge:—

CASE IV.—Bernard Bradley, aged twenty-one, was run over by a cart. He had, when first seen, a fractured humerus, and stated that the wheel had also passed over his body. He complained of pain across the abdomen, but had no mark of contusion; no crepitus of the ribs was found. He was very drunk, and had walked in with the assistance of police officers. He was admitted between three and four o'clock A.M.; vomited frequently during the morning; sank suddenly, and died about half-past three o'clock P.M.

Post-mortem examination.—Brain showed nothing worthy of notice. In the cavity of the peritoneum were several ounces of bloody serum; in the pelvis handfuls of clots. The liver was lacerated and contused on its under surface near the gall-bladder.

The experience of the Hospital decidedly confirms the opinion that the liver, next to the brain, is the viscus most likely to suffer from falls and contusions; a fact that its size and weight will readily account for. The prognosis is, of course, always very unfavorable. Where the injury is extensive, it will most probably be followed by fatal depression, on account of the sympathy existing between the abdominal viscera and the other parts of the system by means of the great sympathetic. The three sources of hemorrhage—the hepatic artery, hepatic vein, and vena porta—increase the danger of death before reaction. If the patient should be fortunate enough to pass that stage, he is still subjected to the risk of violent peritonitis, and must overcome the difficulties that the secretion of a gland always presents to the healing of a wound in its tissue. These considerations make recovery appear almost like a miracle, and have induced some surgeons to believe that none but the most superficial wounds of the liver ever heal, and that others are necessarily and invariably fatal.

This is certainly true as a general rule, but numerous decided exceptions are recorded by various authors.

The subject appears, at different times, to have excited a good deal of attention, and experiments have been made on the lower animals. Among others, Dr. Monro, of Edinburgh, removed portions of the liver from rabbits, without permanently injuring their health. The wound cicatrized, as in other parts of the body. Guthrie, in his Commentaries, speaks of three cases, terminating favorably, in which protruded portions of the human liver were excised. Another is mentioned, in Thompson's work on the Liver and Spleen, in which more than three ounces of the organ were removed, and the patient got well. Dr. Smith, of Maryland, reported, in the North American Archives, (vol. i. page 385,) the case of a man, whose liver was wounded by a dagger, made by grinding the point on a common table-knife. Unpleasant symptoms subsided on the fourth day, and the man recovered. Hennen, in his Military Surgery, records a case in which a musket-ball entered between the eighth and ninth ribs behind, two and a half inches from the spine, and passed out in front, between the seventh and eighth ribs, four and a half inches from the sternum. Hemorrhage from both wounds lasted three days, and the posterior continued to pour out a bilious discharge for nearly six weeks. In three months from the time of the accident the patient was in almost perfect health.

The recovery of two other cases is recorded, in which bile was discharged from the wound, in one of which a musket-ball could be felt buried five inches deep in the organ. The man lived several years, though his health was bad, and purulent and bilious matter was constantly discharged from the wound. Dr. Thompson refers, in the work above quoted, to a case of gunshot wound of the liver, in which the patient died some time afterwards of a different disease, and it was found that the ball had passed through the left lobe, about three inches from its lower border.

In nearly all the above cases the injury was followed by jaundice, and in several the characteristic pain in the shoulder was present. How soon the jaundice appeared is not mentioned.

When the gall-bladder is wounded, death is almost inevitable from the constant flow of bile into the peritoneal cavity. Thompson mentions one authentic case of recovery. The patient died of thoracic inflammation two years afterwards, and a bullet was found in the gall-bladder.

In all the cases referred to above, there were external openings. As lacerations from concussion and contusion can only be certainly recognized by examination after death, there is an entire want of statistics in reference to the possibility of their recovery. The want of an exit for the discharge is an unfavorable circumstance, and as they are hardly likely to heal by first intention, their only chance is probably in the formation of an abscess and of peritoneal adhesions.

It may, however, perhaps be possible for recovery to take place even without these adhesions. Dr. Nicol, an English army surgeon, located for some years in India, found, in many instances, cicatrices on the surfaces of the liver, which, in his opinion, must have occurred from the bursting of abscesses into the cavity of the abdomen. Hennen has also seen several similar cases.

Several members of the Society alluded to cases in which they had had positive evidence, or thought it exceedingly likely that the liver had been wounded and the wound cicatrized.

Rapidly Recurring Encephaloid Cancer of the Left Breast.—Dr. S. W. GROSS presented a specimen of cancer of the breast, from an unmarried servant woman, forty years of age, whose menstrual functions were performed regularly.

It was removed yesterday morning by Professor Gross, and was the fourth operation which has been performed for the same disease in the last twenty months. In the first three operations the gland was but partially removed, leaving the greater portion as the nidus for the new formations. About two years since the first tumor made its appearance, and was extirpated at the expiration of four months. The second soon began to develop itself, and was removed in nine months. In a few weeks the third tumor commenced to grow, and was excised in seven months, and the specimen on the table was removed four months and a half after the last operation.

All of these tumors were tuberculated, firm, and compressible, and inclosed in an imperfect cyst, formed by the condensation of the surrounding cellular tissue. There was no retraction of the nipple, and no involvement of the neighboring lymphatic glands. The subcutaneous veins were enlarged, and the tumor was the seat of sharp, shooting pains, extending to the shoulder.

The woman's general health has always been excellent; she has always made good recoveries from the operations, and there is no cancerous disease in her family.

Physical examination showed that the tumor was encephaloid, which was confirmed by the microscope, a great number of very large cancer-cells being present.

The points of interest in this case are, the rapid recurrence of the cancer; the non-involvement of the lymphatic glands; the absence of the cancerous cachexia; the good health of the patient; and the non-appearance of the tumors at the cicatrices of the former operations.

DR. WOODWARD said that he was much interested in the case which had just been detailed to the Society, and had especially noted the fact of the absence of the symptoms of the cancerous cachexia in this rapidly recurring cancer. The so-called cancerous cachexia is often absent, both in cases of scirrhus, and encephaloid. Cancers may be observed, from time to time, possessing the attributes of malignancy in a terrible degree, running a most rapid course and speedily terminating fatally, but in which none of the so-called cachectic appearances occur at any time. As a general rule, when cachexia exists, there is more or less disease in important internal organs, cancerous infiltration, fatty degeneration, and the like.

On page 201 of the Proceedings, his remarks would seem to indicate that he attributed the cancerous cachexia exclusively to fatty degeneration of the liver. He desired in this place to correct any erroneous impression which might arise from the perusal of that paragraph, which only in part represented his views.

Undoubtedly disease of the liver plays an important part in *some cases* in the production of the appearances called cachectic; we are not yet in a condition to say that it does in all. Nor can we overlook the part which the diseased state of other internal organs, as the mesenteric and other lymphatic glands, the intestinal canal, the lungs, etc. may play in creating a cachexia.

It is necessary to observe the utmost care in such investigations as the present, lest a generalization, based upon a limited number of facts, be overturned on a wider survey. But we are placed in this position: the cancerous cachexia so-called is not constant; cancer may exist without it, and that in any degree of severity; nor are these rare exceptional cases; they are exceedingly numerous, every surgeon can recall them from his own personal observation; and hence is inevitably and logically drawn the inference, that the cachexia is not *necessarily* the companion of cancer; that it is an *accident*, and not an *essential;* and if an accident, we are driven to look beyond the carcinomatous disease to the complications and to the disturbed functions of involved organs for its cause.

If these views be correct, it legitimately results that the diagnostic value of the cachexia is very small. The fact of its absence will not prevent the surgeon from diagnosing cancer in many cases. But it has been said that *when present* the cachexia invariably indicates cancer. This assertion at once starts the question, is the cachexia so peculiar that it can unhesitatingly be called cancerous, *apart* from the evidences of a local cancer? It is to be regretted that this question must be answered in the negative. There is no one symptom belonging to this cachexia that may not be met in other diseases; and in patients free from cancer, but suffering from various chronic diseases, and especially from painful diseases of internal organs, a train of symptoms occasionally arises so exactly imitating the so-called cachexia as to lead to errors in diagnosis even by experienced physicians and surgeons.

The question of cancerous cachexia, and its cause, or causes, was further discussed by several members of the Society.

DR. DARRACH stated that he had had several times occasion to notice that the cancerous cachexia is well pronounced when the lymphatic glands are the seat of the disease.

DR. PACKARD remarked that from some cases which had come under his observation, the cachexia accompanying cancer seemed dependent, in part at least, on the degree of influence directly exerted by the local disease upon the function of blood-formation.

Thus in several cases of small cancerous deposits stricturing the œsophagus or pylorus, and in this way interfering essentially with the supply of alimentary material, the cachexia was very marked. In several others, the rectum being the seat of disease, this symptom was but slightly developed. When, however, extensive formations of cancer take place in the rectum, and especially when they increase rapidly,—when a drain is thus established upon the blood already formed,—the cachexia is apt to be well-pronounced.

Small or slowly-growing cancers, so seated as to interfere with the function of blood-formation, as for instance in the stomach, liver, or lungs, seem, therefore, to be attended with a more marked cachexia than those seated elsewhere. But if the latter are very large, and abundantly nourished, they have a like effect, perhaps, however, owing in great measure to their drafts upon the whole mass of blood. A remark made a few minutes since by Dr. Darrach, that the cachexia is generally well-pronounced when the lymphatic glands are the seat of the disease, seems to afford obvious support to the idea suggested.

Dr. Packard would of course by no means assert that a mere deficiency of blood-material, or a mere drain upon the fully-formed blood, is by itself assignable as the cause of the cachexia in cancer. Whether there is added to either a specific element, and in what that specific element may consist, are questions not yet answered; meanwhile the circumstances mentioned have perhaps some weight, if they are in accordance with general observation.

ART. IV.—*The True Cause of Long and Short-Sightedness, together with a few Observations on the Power to Dilate and Contract the Pupil of the Eye at Will.* By CHARLES W. WRIGHT, M.D., Professor of Chemistry in the Kentucky School of Medicine.

THE cause of long and short-sightedness is attributed to a change in the refracting media of the eye, or to a change in the diameter of that organ, or to both causes combined. Thus, in myopia the refracting power of the humors is said to be too great, by which the image of an object falls short of the retina; whereas in the opposite condition, presbyopia, the refraction is diminished, and the rays of light are not sufficiently converged to depict an image on the retina. In the former condition there is said to be an over-convexity of the cornea and lens, and in the latter a diminished density and quantity in the humors of the eye. In regard to the first of these conditions, there is no proof that the refracting power of the lens, or other humors of the eye, is increased, and in the great majority of cases the cornea is not more convex in near-sighted persons than in those not so affected; on the contrary, the reverse frequently appears to be the case. The only reason for such a supposition is the fact that the sight of the myopic is improved by the use of concave glasses, by which the rays of light are dispersed and prevented from coming to a focus before reaching the retina, or rather the black pigment, which is in reality the surface upon which the image of an object is painted.

Now the essential cause of short-sightedness is to be sought for in the iris, which in all cases is preternaturally contracted, or possesses an unusual degree of irritability. When the case is congenital the iris possesses an excessive degree of sensibility to impressions of light; in fact, this form of the affection is almost always observed in individuals of a nervous temperament, together with an excessive degree of muscular irritability. Exposure to a bright light aggravates the congenital form of the affection by producing contraction of the circular fibres of the iris, and the same remark will apply to large doses of opium, which not only aggravate the affection in the myopic individual, but will produce temporary near-sightedness in a person not so afflicted. In congenital cases any means that will cause dilatation of the pupil, such as belladonna for example, will benefit the patient, and enable him to read with the book held at the same distance as a person would require it whose eyes are sound. I have repeatedly experimented with opium and belladonna, and always with the same opposite results—shortening the field of vision with opium, extending it with belladonna. Snow-blindness is due in great part to powerful contraction of the pupil; short-sightedness it is, in fact, to an excessive degree. It is well known that this affection is much more common in cold climates, where the ground is covered with snow for several months in the year, than it is in warm, cases being frequently met with in the New England States, but rarely in the Southwest.

The true cause of long-sightedness consists in a preternatural dilatation of the pupil of the eye, or, what amounts to the same thing, a loss of irritability of the circular fibres of the iris. This, as is well known, is a condition common to persons advanced in life, or those who are in the habit of viewing objects in the distance. Contrary to the statements of most writers on the subject, the sight of the myopic improves as he advances in life, nor have I ever known such a person to become long-sighted. In senile presbyopia the iris does not respond to the rays of light as readily as it does before that condition obtains. That this condition is to be referred to a loss of power in the iris to respond to luminous impressions, and not to any change in the refracting power of the humors of the eye, or to any alteration in the diameter of that organ, is, I think, sufficiently established by the following experiments.

Thus a large dose of opium, by producing contraction of the pupil, enables the presbyopic to read when the book is held at the usual distance from the eye. Exposing the page to the direct solar rays enables the far-sighted individual to read by powerfully stimulating the iris, when under other circumstances he cannot distinguish a letter without the assistance of glasses. A small piece of card, perforated with a common pin and interposed between the eye and the object viewed, by subserving the purpose of the contracted pupil will enable the individual to distinguish objects at the usual focal distance; the smaller the aperture the shorter the focal distance. In viewing an object through perforated cards, the apertures of which vary in diameter, the pupil remains stationary when the intensity of the light is uniform, as one aperture is substituted for another and the focal distance thereby changed. The perforated card should be held as near the eye as possible in conducting these experiments. Anything that causes an increased flow of blood to the eye, by which the irritability of the muscular fibres of the iris is augmented, will restore the sight. Thus, violent coughing will frequently enable the far-sighted to see objects distinctly at the usual distance for a period of from ten to fifteen minutes.

From the foregoing observations it would appear that the iris is the principal means by which the eye is enabled to adapt itself to viewing objects distinctly which are situated at different distances from the observer. That such is the fact I think there can hardly be a doubt. Thus in a uniform light the sound eye can be made to see objects distinctly at different distances by viewing them through apertures of different diameters, the aperture being diminished as the object approaches the eye. This may be carried to such a degree, by using apertures sufficiently small, that a person will be enabled to read printed matter which is held within half an inch of the cornea. A similar experiment can be made with the iris itself, by allowing the sun's rays to fall directly upon the printed page, when it may be placed in contact with the eyelashes, and the words will be distinctly legible. In such an experiment the pupil is contracted to a diameter less than that of the head of a common pin. Opium will also produce myopia in persons whose eyes are endowed with the usual focal powers, and belladonna, pink-root, and hyoscyamus, produce the opposite effect. The pupil is always observed to expand when a distant object is viewed, and to contract as one near the eye is observed.

As to the power which the ciliary muscle is supposed to possess in adjusting the focal distance of the eye, nothing definite is known; at most, its action is subsidiary, inasmuch as such an arrangement is not at all necessary to the successful operation of the optical mechanism of the eye.

From the foregoing statements it will be observed that the terms *myosis* and *mydriasis* could be very well dispensed with, inasmuch as the former signifies preternatural contraction of the pupil, and the latter dilatation. In other words, myosis is another term for short-sight, and mydriasis for long-sight; the only difference being that these conditions are generally accompanied with some diseased state of the eye. They might with propriety be termed the acute forms of long and short-sightedness. Ergot benefits the sight in a person affected with mydriasis, by producing contraction of the circular fibres of the iris.

As regards the power which man has over the muscular fibres of the iris, there can be no doubt but that by a little practice the pupil can be made to dilate and contract with as much facility, by an effort of the will, as that the number of respiratory movements can be increased or diminished at pleasure. This power over the iris can be acquired by rapidly changing the focal distance of the eye, which can be accomplished by interposing a small object between the eye and a larger one situated a mile or more from the observer. A common pin, held at a distance of four or five inches from the eye and on a line with the distant object, is well adapted to the experiment. On viewing alternately the far and near object, the iris will be observed to dilate when the eye is fixed on the former, and to contract on the latter. On making this experiment a few times the observer will be enabled to contract or dilate the pupil at will; at first, by fixing the eye upon imaginary objects, and in a short time, without any assistance of the kind. The experiment is best conducted in a room where the sun's rays have not a direct entrance, but in other respects the light may be as intense as that which is most agreeable in reading. In a strong light voluntary control over the iris greatly diminishes.

The foregoing remarks embrace the results of a long series of experiments and observations on the subjects discussed, which the author hopes to be enabled to present more fully and clearly at no distant period.

ART. V.—*Case of Cæsarean Section, in which both the Mother and Child were saved.* By W. F. McCLELLAND, M.D., of Council Bluff, Iowa.

ON the morning of the 9th of November, 1857, I was summoned to see Mrs. M., who had been taken in labor a few hours previously. The patient was about thirty years of age, had arrived at her full time, and presented all the symptoms of a speedy delivery. Upon attempting, however, to make an examination per vaginam, I found, about an inch from the vulva, an obstruction which would not allow the passage of the finger. The obstacle felt very much like a thickened, unbroken hymen, with an opening in the centre, through which I could barely insinuate the point of my finger. Upon questioning the patient, I learned that she had been confined but once before, about five years previous, at which time the physicians in attendance were obliged to remove the child "in pieces," and that the instruments employed for the purpose produced great laceration of the vagina.

Judging from the history thus briefly related, that there might be deformity of the pelvis, as well as stricture of the vagina, I called in consultation my partner, Dr. Horne, who advised that the labor should be allowed to progress until the head distended the vagina, when the stricture should be divided. To this I readily consented, and permitted the case to continue for several hours, at the end of which time, although the pains had been strong, I found, upon examination, that the head had not descended into the pelvis. I then determined to divide the adhesions of the vagina, in order to permit an examination beyond. This was accomplished by means of a probe-pointed bistoury, wrapped to within half an inch of the point, and the constriction thus incised at two points. Upon introducing the finger, I could now feel the mouth of the uterus, found it dilatable, and the vertex presenting, but unable to descend in consequence of great deformity of the pelvis. As nearly as I could ascertain, the antero-posterior diameter of the pelvic canal did not exceed one and five-eighths inch, and the transverse one and a half inch. The sacrum also was very much curved, and the angle of the pubic arch very acute. The uterine pains had now been strong for fifteen hours, when I again called Dr. Horne in consultation. After a renewed examination of the parts, we concluded that the pelvic canal was not only too small to allow the passage of the child in the usual way, but also too narrow to justify a resort to the perforator and crotchet. The only alternative was the Cæsarean section, and having decided upon this, I reported the fact to the patient, who consented, without a moment's delay, to submit to our decision.

The bladder having been evacuated, and the other usual preliminaries attended to, the patient was placed upon her back, the shoulders slightly raised, and chloroform administered by Dr. Grimes, who was invited to be present. I then made an incision along the linea alba, extending from about an inch below the umbilicus to within two inches of the symphysis pubis, dividing the whole thickness of the abdominal parietes. A corresponding incision of the uterus was next made, measuring about six inches in length, in performing which I first made a small opening above and continued it downward, using the index finger of my left hand as a director. The child was easily extracted, and cried lustily, and while I secured the cord, Dr. Horne removed the placenta. As soon as the latter was accomplished, a tolerably profuse hemorrhage took place, but by the application of sponges wrung out of cold water, the uterus was soon made to contract, and all bleeding ceased. Having carefully put back the omentum out of the way, I brought the external wound together by interrupted sutures and adhesive strips, leaving the lower angle open. A full anodyne was next administered, and during the succeeding night the patient rested as well as could have been expected.

The following morning she appeared quite comfortable; pulse 96.

Second day, pulse 106; considerable fever; great tenderness of the abdomen, and tympanites. Ordered Dover's powder, grs. xii, calomel, grs. xx, with fomentations to the abdomen. A few hours after, the bowels moved three times; fever subsided; pulse reduced to 100; tympanites began to disappear. The succeeding night she slept well. The lochia passed entirely by the vagina.

The third day after the operation milk appeared in the breasts, and the child was nursed.

From that time no unpleasant symptom occurred, and by the end of the second week the wound was entirely closed. The third week the patient sat up in bed, and in less than ten days thereafter she was about the house attending to her domestic duties.

She has now, December sixteenth, entirely recovered; and the child is growing finely.

Bi-Monthly Abstracts;

OR, BI-MONTHLY NOVELTIES IN MEDICAL, PATHOLOGICAL, SURGICAL, OBSTETRICAL, PHYSIOLOGICAL, AND CHEMICAL SCIENCE.

SURGERY.

BY SAMUEL W. GROSS, M.D.

I.—*Congenital Extrophy of the Urinary Bladder, and its Complications, successfully treated by a new Plastic Operation.* By DANIEL AYRES, M.D. (Pamphlet reprint from the New York Medical Gazette, February, 1859.)

IN this paper Dr. Ayres relates a case of extrophy of the bladder, complicated with prolapse of the uterus, occurring in a female twenty-eight years of age, who was admitted into the Long Island College Hospital, on the first of November, 1858. Four months previously she had been delivered, at the full term, of a well-developed child, which died during parturition, this act having been performed with no great difficulty. Soon after her recovery the uterine complaint made its appearance, for which she had in vain been wearing different forms of pessaries. She was of a weak, sickly appearance, and her general health was not good.

The separation of the pubic symphysis was estimated at about three inches, and the bladder formed an oval, bright red, sensitive tumor, two inches in length by an inch and a quarter in breadth. The integuments between the protruded viscus and the ensiform cartilage were devoid of hair, and were red, soft, and sensitive. The labia majora were large, and lost themselves in either thigh, the nymphæ projected on each side of the vulva, and there was an absence of the clitoris and urethra.

To relieve this deformity, Dr. Ayres proposed—"First, to form an anterior wall for the exposed bladder; second, to restore the urinary canal; third, to establish the anterior fourchette of the vulva; fourth, to supply means to prevent the prolapse and to correct the renal secretions."

To fulfill these indications, on the sixteenth of November Dr. Ayres performed a plastic operation, which, as the result shows, was not only very ingenious, but successful. It consisted in raising a large flap from the anterior and superior portion of the abdomen, and attaching it to the surrounding parts by means of the interrupted suture. To retain the parts perfectly in place, adhesive strips, compresses, and a bandage were applied. The flap covered the bladder, with the exception of a triangular space at its lower portion, which was left exposed for another operation. On the fourth day all the sutures were removed, and the parts were found to have united, with the exception of a small spot the size of a ten-cent piece. On the seventh of December this had nearly healed by granulation, when the second operation was performed in such a manner as to establish the anterior fourchette of the vulva and to form a urinary canal.

One month after the operation the patient visited the hospital, having walked two miles. The parts were firmly united, the bladder was completely covered, the vulva was diminished in size, and the prolapse of the uterus had disappeared, giving place to a prolapse of the anterior fold of the vagina, which was, however, easily supported by a light pessary.

[While we congratulate Dr. Ayres upon the happy result of this case, we must state that the operation is not novel, plastic operations having been performed for the relief of this deformity by several surgeons, including Pancoast, Langenbeck, and Dieffenbach. Dr. Ayres does not seem to be aware of the case of Professor Pancoast, who operated on the patient at the clinic of the Jefferson Medical College, in February, 1858. As this case has never been published, we append a few notes of its history.

The patient was a male, from Michigan, twenty-eight years of age, and was short and apparently stunted in growth. The external genital organs were more than usually developed, and there was a very large inguinal hernia on the right side extending down into the scrotum. The walls of the bladder, when fully protruded, formed a tumor four inches in breadth and extending vertically from about an inch below the umbilicus to the urethral groove on the top of the penis. When the lower part of this tumor was raised, the orifices of the ureters and a rudimental caput gallinaginis could be perceived. In order to prevent this protrusion of the bladder, which caused the patient so much pain and suffering as to disable him from following any occupation, the following operation was performed:—The bladder was pushed back into the cavity of the abdomen and held by pressure on a sponge. A large flap was raised on either side, with its base to the bladder and notched at its outer side, its lower end extending on the side of the penis to near the glans. These were of such a shape as to meet exactly in the middle line and form a sort of dome over the cavity of the bladder, the cutaneous surface turned toward the bladder, and the raw tissue left to cicatrize and form a new skin. This raw surface was kept covered with a mixture of collodion and glycerine, so that the air should be excluded and the cicatrization be made to go on so slowly as not to interfere with the circulation in the flaps. The flaps were united in the middle line by the tongue and groove suture, and transversely where the notches in the flaps came together, by the Bozeman suture. Union took place throughout by first intention, but subsequently opened under the pressure of the abdominal muscles, near the pubes. The extensive wound made by raising the flaps, which on the right side included the outer covering of the hernial tumor, was closed as much as possible by drawing the edges of the wound together and the sliding round of some secondary flaps, raised from the adjoining surface. A large amount of raw surface was left, however, for cicatrization, and kept covered from the air. Nearly the whole of the skin which was taken to form a dome for the bladder was covered with an unusual strong growth of hair; this was closely shaved off. From what Dr. Pancoast had observed in other cases, he had no hesitation in turning the roots of these hairs toward the mucous cavity of the bladder, as he was sure their contact with the urine would not only prevent the reproduction of the hair, but cause the bulbs to be shed and discharged, an opinion which the result verified.

When the union and cicatrization of parts were complete, the hernia was found entirely cured by the cicatricial contraction. The bladder was completely held back, and instead of the large gap above the pubes, through which the bladder formerly bulged in a large mass, there was an opening, just above the penis, an inch long and a quarter of an inch wide, through which, when an effort with the abdominal muscles was made, the bladder could be made to project slightly. The patient was dismissed from the hospital, with his condition in every way vastly improved, and with the expectation of returning the ensuing fall to have the remaining small opening closed, and, if possible, have the epispadial groove on the back of the penis converted into a urethral tube. This, however, was prevented by the death of the patient, two months and a half subsequently, from epidemic typhoid pneumonia.]

II.—1. *A Case of Popliteal Aneurism successfully treated by Flexion of the Knee-joint.* By ERNEST HART, Esq.

2. *Report of a Case of Popliteal Aneurism successfully treated by Continued Flexion of the Knee-joint.* By ALEXANDER SHAW, Esq. (Papers read before the Royal Medical and Chirurgical Society of London. Medical Times and Gazette, May 7, 1859, p. 482.)

These interesting surgical contributions contain the results of two cases of popliteal aneurism treated by flexion of the knee-joint, a procedure which recommends itself on account of its simplicity and success. The use of the knife is evidently giving way to the well-directed efforts of surgeons of the present day in curing this formidable disease by various forms of compression, and in doing away with the danger which, until this method came into general adoption, always environed this class of cases.

1. Mr. Hart's case occurred in a man, forty-one years of age, who had well-marked symptoms of an aneurism, which was the size of a small apple, in the external and inferior portion of the right popliteal space. In making an examination of the parts the author discovered that when the leg was fully flexed the pulsation in the tumor ceased entirely, and the thrill nearly so. He therefore determined to maintain the limb in this position, with the hope of effecting a cure. After a week's preparatory treatment the leg was bandaged from the toes to the knee, the tumor not being included, and being completely flexed upon the thigh was retained in this position by the application of a stout roller. At the end of forty hours considerable solidification was found to have taken place in the tumor; and on the fifth day, when it was solid and without pulsation or thrill, the limb was eased and confined at a right angle. On the seventh day the leg was slung and the patient was allowed to move about, and on the twelfth day the limb was extended and the patient walked about, although the knee was somewhat stiff from the confinement in its constrained position. The tumor gradually diminished in size, and at the end of three months it had nearly entirely disappeared.

During the treatment but little inconvenience and no positive pain were experienced, the patient being thin and young, circumstances favoring this method.

Mr. Hart ascribes the cure to the obstruction of the circulation from the acute flexion of the artery, and the direct pressure exerted upon the sac causing the formation of active clots.

2. The patient of Mr. Shaw was a man, thirty years of age, who had a recent aneurism, the size of a lemon, in the left popliteal region. The knee was placed in the flexed position by appropriate apparatus, with the result of stopping the pulsation. The dressings were removed on the fourth day, when the tumor was found to have diminished one-third, its walls were more firm, and its pulsations less violent. Between the third and fourth week the pulsations were very feeble, the tumor felt very solid, and its volume was much reduced. On the thirty-eighth day the pulsations had ceased and the tumor was about the size of a walnut. The knee in the mean time had become stiff, but gradually recovered its functions. For the first ten days some pain was experienced, and a slight swelling of the knee required the application of a lead lotion. On the fifty-sixth day the patient was discharged cured, with complete use of his knee.

In the discussion which ensued upon these cases, Mr. Fergusson stated that two cases had occurred in King's College Hospital, one of which failed, the patient becoming weary of the treatment, while the other was successful.

Mr. Birkett reported three cases in which the treatment had been unavailing, probably on account of its having been employed for an insufficient length of time.

Mr. Shaw mentioned another case of an old man with a large popliteal aneurism, in which he had employed the same procedure, but without success.

From the above facts it will be perceived that eight cases have been treated by simple flexion of the knee-joint, three being complete cures; a sufficient number to recommend it to the profession and justify its further trial.

III.—1. *Treatment of Hydrocele by Electricity.* By Dr. Rodolfi. (Gaz. Medic. Lombard, and Medizinische Neuigkeiten, September 25, 1858.)

2. *Particular Method of Curing Hydrocele almost instantaneously, and without an Operation.* By M. Pétrequin. (Archives Générales, March, 1859.)

1. Sustained by the fact of the galvanic current decomposing fluids, Dr. Rodolfi has applied this means to the treatment of serous effusions into the sac of the tunica vaginalis, which becomes so changed under the influence of electricity as to arrest the abnormal secretion.

In support of this novel treatment the author reports four cases of hydrocele, three being radical cures. The subjoined case will serve as an illustration of the treatment.

A cabinet-maker, thirty years of age, had suffered for fifteen months from a hydrocele of the left side, which had attained the size of the head of a newly-born child. Being placed in a convenient position upon an elevated bolster, with the thighs slightly flexed and widely separated, two platinum needles were introduced, as far as possible from each other, into the scrotum, and connected with a galvanic battery. In ten minutes the poles were reversed, and after sixteen minutes, were withdrawn from the scrotum. To the complete astonishment of all present the hydrocele had disappeared, and in two days the patient left the hospital completely cured. The author saw the case several months afterwards and convinced himself that the cure was a radical one.

The apparatus employed by Dr. Rodolfi consists of the platinum needles, of the screws, conducting wires, and battery of Bunsen, or Daniel, composed of from two to four simple circles; the latter apparatus being preferable on account of the acid not becoming troublesome. The operation consists of four stages—First, introduction of the needles; second, connection of the battery; third, change of the poles; and fourth, withdrawal of the needles. The needles should be guarded by small rings a short distance from their points, in order to prevent them from penetrating too deeply. During the whole proceeding it is necessary to compress the scrotum slightly, and be careful lest the vermicular movements of the dartos force the needles out of place.

2. M. Pétrequin, of Lyons, in a note to the *Académie des Sciences*, January 17, 1859, states that, in view of the great changes produced by electricity upon absorption and secretion, he conceived the idea of applying this fluid to the treatment of dropsies, and particularly of hydroceles. In 1849 he operated upon a patient, forty-five years of age, who had an old, voluminous hydrocele. The poles of a Bunsen's battery were applied, one to the base, the other to the summit of the tumor, for about half an hour. The next day the hydrocele had disappeared, and no relapse had taken place at the end of a month.

IV.—*On the Treatment of Chronic Hydrocephalus by Injections of Iodine.* By DANIEL BRAINARD, M.D. (Chicago Medical Journal, April, 1859.)

Dr. Brainard, in view of the general futility of the treatment of this affection by tapping, compression, and other methods, calls the attention of the profession to the injection of iodine, in the form of Lugol's solution, into the lateral ventricles of the brain for the relief of a preternatural secretion of serum in these cavities. His reasons for this recommendation, which, at first sight, might seem a rash one, may be stated to be that chronic hydrocephalus is an encysted dropsy dependent upon an increase of serum in the ventricles of the brain, which has no connection whatever with the cerebro-spinal fluid, the sac for the fluid being formed by the ependyma, or lining serous membrane of the ventricles. Since, therefore, iodine proves so successful in other serous cysts, and the sac of chronic hydrocephalus is of limited extent, its injection with iodine would have the effect, as in hydroceles, of altering the secreted fluid, and changing the secernent membrane. The lining membrane of the ventricles is devoid of nerves, red vessels, and irritability, and the presence, therefore, of the injection produces neither pain nor spasm. After hydrocele the author considers cases of chronic hydrocephalus most suitable for the use of this remedy, and to show that it is not only not dangerous, but justifiable, he adduces two cases, of which the following are brief abstracts:—

CASE I.—Dr. Tournesko, of Bucharest, drew off eleven ounces of fluid from the head of a child, two months old, the head measuring twenty inches. At the expiration of twenty-four hours the head had refilled, when a large-sized trocar was introduced through the side of the coronal suture into the lateral ventricles to the depth of two inches, and twenty-four ounces of fluid drawn off. Sixteen grains of iodine in three drachms of alcohol were then injected, the immediate effects upon the child being but slight. Twenty days afterwards the child was in good health, and the head was of a natural size. At the end of fifteen days more, the patient was in the same satisfactory condition.

CASE II.—Was a child, who, when first seen by the author, was four days old, and had chronic hydrocephalus along with bifid spine. The head measured nineteen inches in circumference, the upper portions of the parietal and occipital bones were wanting, and the head was hot, tense, covered with large veins, and rapidly increasing in size. The spinal tumor in the lumbar region was three inches in length, and one and a half inch in breadth. When the child was four weeks old, Dr. Brainard injected the latter with one-sixteenth of a grain of iodine and one-eighth of a grain of iodide of potassium in half a drachm of water, with the result of obtaining a cure at the expiration of six months. As the tumor of the back diminished, the size of the head increased, and it was, therefore, treated without delay. During a period of seven months the head was injected nineteen times with iodine, in the form of Lugol's solution, the quantity ranging from one-sixteenth to twelve grains. At each time of the injection of the larger quantity, twitching of the limbs and vomiting were produced, as well as once when nine grains were used, and once when six grains were thrown in, the latter of which was followed by convulsions, in which the child died. This case, therefore, showed that iodine is innocent when employed in this way, and although it did not result in a cure, it probably had the effect of prolonging life.

In view of the difficulty of carrying a sufficient quantity of iodine into the ventricles to excite a proper amount of action without leaving so much as will produce, by absorption, bad effects upon the system, Dr. Brainard recommends, First, to use a trocar of a certain size, as that employed for hydrocele; second, compress the head, and draw off as much fluid as practicable; third, inject a solution of iodine of such strength as that, when mixed with the fluid remaining in the ventricles, it will be of the strength of half a grain of iodine to the ounce of liquid; fourth, throw this through a gum-elastic tube, carried through the canula into the ventricle; fifth, inject the fluid first drawn off through the same tube to expel the solution.

V.—*On Extirpation of Fibroid Tumors of the Uterus.* By PROFESSOR B. LANGENBECK. (Deutsche Klinik, I., 1859.)

Professor Langenbeck, in this paper, after making some general remarks upon the seat, texture, and want of success of the medical treatment of fibroid tumors of the uterus, discusses the propriety of their removal, a procedure which has been practiced by Lisfranc, Amussat, Boyer, Kiwisch, and Simpson, with variable success. He is of the opinion that the operation is contra-indicated in those cases in which the tumor is seated in those portions of the uterus covered by peritoneum, and that it is inadmissible in interstitial fibroid tumors of the fundus of the organ, on account of the impossibility of ascertaining, even by the most rigid examination, the distance of the tumor from the peritoneum, and the consequent liability of the membrane to inflammation, aroused by tearing out or pulling off the morbid growth. On the other hand, the operation is indicated, when, in young patients, it seems impossible to check the dangerous and exhausting hemorrhages, when the tumor occupies the anterior or posterior wall of the cervix, or one of the lips of the os, and is accessible to the knife. If the tumor is seated in the cavity of the uterus, and does not protrude at the os, the latter must, as an initiatory step, be sufficiently dilated by a sponge-tent. The patient is placed in the same position as that for lithotomy, and the external genitals are separated by a speculum. To facilitate the extirpation, it will be found useful to make light pressure upon the hypogastrium, and to push the uterus downward by two fingers introduced into the rectum. The operation is commenced by dividing the lip of the os and that portion of the neck which is opposite to the tumor, when the surgeon introduces his left index finger, if possible, so high as to enable him to reach the upper border of the growth, and then carries a straight knife along the finger, and divides with one stroke the mucous membrane and proper tissue of the uterus down to the substance of the tumor. The tissues are then carefully detached by means of the finger or the handle of the knife; firm, fibrous bands are cut through with a pair of strong scissors, and the whole tumor is thus gradually removed. When the adhesions are very strong, it will become necessary to render the tumor tense, by drawing it down with a vulsellum, while the finger, knife, or scissors separates it cautiously from its uterine connections. Professor Langenbeck reports three cases in which he has performed the operation.

VI.—*On the Treatment of Prolapsus Ani in Children.* By M. GUERSANT. (Behrend und Hildebrand's Journal für Kinderkrankheiten, 1859, 1, 2.)

In a small hospital in London, to which patients suffering from diseases of the rectum alone are admitted, prolapse of the anus is not treated by operation. According to Dr. Salmon, this disease can be cured, not only in children, but also in adults, by the evacuation of the bowels in the recumbent posture, as in this position the patient cannot strain much, thus, generally, preventing the descent of the intestine. After the observance of this treatment for some time, the relaxation of the parts, which permitted the prolapse, disappears, and a cure is effected. At the same time vegetable astringent injections are employed, although alum will be found useful. As a local application strychnia may also be mentioned. This was first employed successfully by Duchassoy, who made two or three very small blisters around the margin of the anus, and dressed the raw surfaces with the ointment of strychnia. Dr. Johnson treated, in 1854, two cases by the local application of the same remedy; he states that in the lighter and more recent forms of prolapse he obtained a cure by regulating the bowels, employing astringent injections, and administering tonics. In neglected cases, when the sphincter is much relaxed, strychnia may be of some use, but it is not, however, to be recommended, as it is unreliable in grave, and superfluous in light cases; it is, moreover, troublesome, and not without danger. Dr. Johnson considers cauterization after Guersant's method more valuable.

In the Metropolitan Free Hospital, Mr. Hutchinson employs the tincture of nux vomica, in very small doses, since he believes it imparts tone to the sphincters and walls of the intestines.

Sir Benjamin Brodie prescribes, internally, calomel and rhubarb, and uses injections of the dilute tincture of the chloride of iron.

Mr. Ashton maintains that in children suffering from this affection, the liver is principally to be attended to; and Mr. Curling recommends the use of cod-liver oil, after sufficient purgation.

Mr. Salmon treats recent cases in children in the following way: First, the patient must evacuate his bowels in no other but the recumbent posture; second, the prolapsed part is thoroughly moistened with a decoction of oak-bark and alum; third, internally, he employs calomel and rhubarb; when he orders, fourthly, tonics, and a nourishing diet.

When the usual remedies have been employed without effect, and the symptoms remain obstinate, M. Guersant advises cauterization of the skin and sphincter muscles with the hot iron. He does not cauterize the whole of the protruded mucous membrane, as was formerly done, as he considers the measure barbarous and hazardous. He proceeds, generally, in the following manner: The child is subjected to a certain diet, and shortly before the operation an injection is administered to clean out the lower bowel. The patient is placed upon his side, his thighs are flexed, and the protruded rectum reduced; an assistant drawing away one buttock, while the operator controls the other. The cautery is about the shape of that used by dentists, either curved or straight, and terminates in a small ball, which, above, runs out into a little point. It is applied at opposite points around the anus, and must penetrate the sphincter in order to be efficient. It is also necessary to draw the margins of the anus well apart on applying the cautery, and allow the small ball, after its point has penetrated the sphincter, to act upon the margins of the skin and mucous membrane. The patient must be placed under the influence of chloroform, and the iron be used at a white heat. If the rectum protrude during the operation, it should be pushed out of the way of the instrument. Cold-water dressings are the only applications made after the operation.

M. Guersant recommends this plan of treatment as an excellent, but not infallible means. In a few rare cases the children are cured in one day; more frequently, however, the prolapse returns in a few days, and the cure is not completed before the eighth or tenth day, when cicatrization has taken place. Sometimes a second cauterization will become necessary.

PATHOLOGY AND THERAPEUTICS.

BY EMIL FISCHER, M.D.

I.—*Anatomical and Physiological Researches on Dropsy consecutive to Typhoid Fever.* By Dr. Leudet.

The different kinds of dropsy following typhoid fever have been described by a great many pathologists; in France this subject has received less attention than in other countries. MM. Louis, Chomel, Forget, Guarin, and Piedagnel described only the œdema confined to the lower extremities. M. Martin is perhaps the only French author who has given an account of the anasarca and ascites following typhoid fever.

Partial œdema has been very well described by R. Virchow, (*Archiv für pathologische Anatomie*, tome ii. p. 401,) and by Magnus Huss, (*Statistique et traitement du typhus et de la fièvre typhoïde*, p. 205; Paris, 1855.)

Dr. Griesinger, of Tübingen, has given a very complete description of these dropsies (in *Virchow's Handbuch der Pathologie, etc.*, tome ii. p. 173, 1857.)

"There exists," says he, "a local dropsy consecutive to the coagulation of the blood in the veins, the cause and signification of which are evident. We meet, as a very rare complication of typhoid fever, in its second stage, an extensive dropsy of the cellular tissue and of the serous membranes. This dropsy is more common in certain epidemics; I have observed it, during an epidemic which befell a population suffering from dearth, in about one-fourth of the cases. The œdema supervened generally at the end of the third week, more rarely at the end of the second; it commenced sometimes in the face, at other times in the inferior extremities, spread rapidly over the whole body, and was often accompanied by more or less ascites. A small number of patients presented, in addition, a marked albuminuria. In most cases it was not very decided, or had already ceased. During this time the skin was warm and dry; a copious eruption of miliaria accompanied the beginning of the dropsical effusions, and persisted as long as they lasted; sometimes the pulse was at the same time slow and irregular. The internal organs showed no symptoms of disease. This dropsy lasted generally from six to ten days and disappeared mostly within a few days. It exercised no unfavorable influence upon the termination of the disease; in fact, only a small number of patients succumbed. The dropsy aggravated the prognosis only by the circumstance that it prolonged the period of convalescence."

M. Leudet had not seen a single case of this dropsy during nearly ten years of observation made in the hospitals of Paris; but having had charge, for about four years, of a division of the Hôtel-Dieu of Rouen, he had the opportunity of observing a certain number, and has reported seven cases of this kind in his memoir.

A careful comparison of his observations with those published by other authors enabled him to draw the following conclusions:—

The typhoid fever which is followed by dropsy is characterized in Rouen, as well as in Paris, by ulceration of the intestinal follicles. The serous infiltrations, whether confined to the lower extremities, or general, were of the nature principally described in Germany. They are rarely limited to the superior extremities or the face.

Sometimes the effusion takes place into the peritoneum; M. Leudet has observed no case of this kind; in one instance he met with a peritonitis.

The œdema is colorless and painless, and is, therefore, easily distinguished from erysipelas. It supervenes mostly without prodromic symptoms, and coincides often with some exacerbation of the fever, with sweats, an abundant eruption of sudamina, and an intense bronchitis. This latter coincidence has been particularly remarkable in Rouen, but it is not constant. In the cases observed by M. Leudet, as well as in the epidemic studied by M. Griesinger, the œdema showed itself, generally, in the second or third week of the disease, and disappeared in two or three weeks.

M. Leudet has been unable to discover albuminuria or lesions of the kidneys in any of his cases. These two morbid states have been observed, however, by

Rayer, Martin Solon, Finger, Frerich, Begbie, Christison, Johnson, Griesinger, Barthez and Rilliet.

The cause of this œdema, says M. Leudet, seems to be the constitutional weakness of the inhabitants of our city, and the very nature of the typhoid fever, which is more frequently accompanied by stomatitis, pleurisy, etc. than anywhere else. Besides, the fevers and inflammations have generally an adynamic character in Rouen. The anasarca is not a serious complication of the fever; it prolongs, however, the period of convalescence. The treatment consists of tonics exclusively. (*Archives Générales*, October, 1858, and *Gazette Hebdomadaire*, March 18, 1859.)

II.—*On the Existence of Albuminuria in Yellow Fever.* By DR. ARNOUX.

The attention of phathologists has been repeatedly directed to the existence of albuminuria in yellow fever. Dr. Arnoux, Physician-in-chief of the Naval Forces at Martinique, adds new and important testimony to what is known about this symptom. A report of his contains the following passage:—

"We will not conclude this general review of the diseases which have reigned during the last quarter of the year 1858, without referring to a case of sporadic yellow fever, the diagnosis of which was confirmed by the presence of albumen in the urine. As long as the disease followed its regular course, albumen was present in great abundance. At the decline of the second stage, it was perceptibly diminished, and disappeared completely as soon as convalescence was established. We have at the same time had an opportunity of making a comparative observation in the case of an artilleryman, who presented, at the moment of his admission to the hospital, decided symptoms of typhus icterodes, except that peculiar *facies*, which is a serious indication for the physician accustomed to observe these kind of affections. This experience has given still more weight to the pathognomic symptom of yellow fever pointed out by Dr. Ballot. The absence of albumen confirmed our first diagnosis, and sulphate of quinia, administered toward the end of the paroxysm, *promptly cured* a disease which had simulated a malady for which we unfortunately possess no remedy heroic enough." (*Gazette Hebdomadaire*, May 6, 1859.)

III.—*On the Use of Tannin in large doses in Albuminous Anasarca.* By DR. GARNIER.

Pure tannin, tannic or gallic acid, was at first prescribed in hemorrhages and diarrhœa, in pretty small doses, as it was considered a poison. Later, many practitioners recommended its use in nocturnal sweats, in diabetes, and in atonic diseases. Dr. Garnier, of Paris, was induced to try tannin in the albuminous anasarca consecutive to scarlatina, a disease which so obstinately resists ordinary measures. From the observations he has lately published in the *Archives Générales de Médecine*, it results that under the influence of large doses of this agent, the general infiltration of the cellular tissue, and the presence of albumen in the urine have simultaneously disappeared. Dr. Garnier gives the following conclusions at the end of his treatise:—

1. Tannin, in the dose of fifteen to thirty grains through the day, cures ana-

sarca or œdema which has been passively developed, and coexist with albuminous urine. 2. Its curative action manifests itself by copious urine, which gradually assumes its physiological characters, by perspiration, loose stools, etc. 3. These symptoms appear on the second day of the administration of the tannin. 4. Given in solution of about three to eight grains, tannin does not derange the digestive organs. 5. The action of tannin seems to be primitively directed upon the fluids of the economy, the albuminous principles of which it coagulates and plastifies; its action upon the solids seems to be consecutive, tonic, and astringent.

The facts reported by Dr. Garnier are quite interesting; it is, however, important to remark, that tannin has been given only in cases of transitory albuminuria, following congestion of the kidneys, and that albuminous or granular nephritis is not at all in the question. This distinction should be made in order to appreciate therapeutic methods properly. (*Archives Générales*, January, 1859.)

IV.—*On Uræmia.* By PROF. OPPOLZER.

The nature of uræmia is not yet agreed upon by pathologists. In reference to the changes of the blood in Bright's disease of the kidneys, we know only that the proportion of albumen and of the blood-corpuscles is diminished, while that of water and of urea is augmented. The accumulation of urea cannot, however, be received as the cause of the uræmic symptoms, as injections of urea in animals do not produce any perceptible disturbance, except an increased secretion of urine. Supported by experience, and many experiments on animals, in whom he injected carbonate of ammonia, (NH_3 CO_2,) Frerich advanced the view *that uræmia is owing to a decomposition of the urea accumulated in the blood, into* NH_3 CO_2.

Experience at the sick-bed teaches, indeed, that the opinion of Frerich, although having been frequently contested of late, is still to be sustained by a great number of cases.

Some object, that the NH_3 CO_2, in the alkaline matter vomited, is not secreted as such from the blood, but is formed only by the decomposition of the urea present in the contents of the stomach; but although this objection cannot be directly refuted, it is by no means applicable to the NH_3 CO_2 contained in the expired air. Prof. Oppolzer has repeatedly made the observation that in many cases of Bright's disease, where well-marked symptoms of uræmia made their appearance, so large an amount of NH_3 CO_2 was contained in the expired air, that in a solution of MgO, PO_5, through which the expired air was conducted, great quantities of triple phosphates were precipitated. In employing this method of investigation, it was, of course, necessary to ascertain first the absence of other sources of ammonia, such as inflammatory processes in the cavity of the mouth and throat, caries of the teeth, or a disease of the lungs in the suppurative state.

Moreover, Professor Oppolzer often observed in cases of Bright's disease, which had died of acute œdema of the lungs, and which were subjected to a post-mortem examination a short time after death, when putrefaction could not yet have commenced, that the serous fluid contained in the lungs smelled strongly of NH_3 CO_2. All these circumstances seem to prove that in a number of cases the urea accumulated in the blood is decomposed during lifetime into NH_3 CO_2, and that this decomposition occasions those symptoms which are believed to indicate uræmia. It is not known what causes this decomposition of urea, and whether a peculiar ferment is formed at the process; experience teaches so much, that with intercurrent, acute diseases, uræmic symptoms are apt to set in. Those opponents of the theory of Frerich, who admit the possibility of NH_3 CO_2 being developed in the blood, believe, nevertheless, that it must very quickly be eliminated again by the lungs, the skin, and alimentary canal, without giving rise to dangerous symptoms. They do not consider, however, that the material for NH_3 CO_2, the urea, is constantly formed out of the nitrogenous constituents of the blood. So much is certain, that when the vomiting of alkaline matter, and the secretion of NH_3 CO_2 by the lungs cease, the uræmic symptoms increase in a considerable degree.

In discussing Frerich's theory of uræmia, we have made the remark, that it can be accepted only for a certain class of cases; it is now the question, whether in those cases in which a decomposition into NH_3 CO_2 cannot be proved, clinical observation points out another change as the cause of uræmia? An accurate answer to this question is out of the range of present experience. We believe ourselves, nevertheless, justified in assuming, *that in a great number of cases the uræmic symptoms are connected with a serous infiltration of the brain and its membranes.* The author is supported in his opinion not only by very numerous autopsies, but also by the phenomenon, very often observed during lifetime, that in individuals suffering of greatly developed dropsy, the latter rapidly decreases without there being a correspondent increase in the secretion of urine; at the same time the jugular veins become turgid, and decided symptoms of uræmia are developed; the post-mortem examination reveals a serous infiltration of the brain.

Uræmic symptoms are pretty frequently observed in acute Bright's disease, where the greatest part of the parenchyma of the kidney, infiltrated with exudation and gelatine cylinders, allows the excretion of but a small quantity of urine; most generally, however, they occur in the chronic form of the disease, where the destruction of the parenchyma of the kidneys is so far advanced that the function of the organ is completely suspended. The symptoms ascribed to uræmia are very various; we not only include among them the cerebral symptoms, characterized by stupor, sopor, coma, convulsions, in short, eclampsia, but also the nervous symptoms already mentioned, and all the different processes of exudation occurring during Bright's disease.

The uræmia of acute Bright's disease is in many respects different from that accompanying the chronic form of the disease; it usually makes its appearance suddenly, with an attack of eclampsia, and is but rarely preceded by headache or stupor. The eclamptic attacks succeed each other quickly; in most cases consciousness is restored during the interval; the intervals between the later attacks become gradually shorter, until death occurs during an eclamptic fit.

In another series of cases the author observed, after one or several eclamptic attacks, a sudden increase of the secretion of urine which, at the beginning, contained still a large quantity of albumen; but in a short time the urine became clear, the exudation cylinders disappeared entirely, and albumen was present only in traces; at the same time consciousness returned, and convalescence progressed so rapidly that within a few days the patients could be considered cured.

Professor Oppolzer is of the opinion that this sudden change of the disease is owing to an altered state of innervation of the capillary vessels of the kidneys, which is probably produced by the eclamptic fit, for it can hardly be supposed that the process of exudation in the kidneys could suffer so rapid a change that the exuded matter would be suddenly resorbed or eliminated. This view of the influence of the nervous system upon the urinary secretion appears, independently of the process of exudation, a great deal more plausible, if we observe the great influence of the nervous system on the urinary secretion in general.

Professor Oppolzer has seen several cases of persistent alcalescence of the urine, where the latter became at once clear, and of acid reaction, after a catheter had been introduced into the bladder.

The cerebral symptoms of uræmia in chronic Bright's disease rarely make their appearance suddenly; they commence often with vomiting of alkaline matter, headache, and stupor, upon which delirium, convulsions, and death may follow; or the stupor turns into sopor and coma, and death occurs without a previous eclamptic attack.—(*Wiener Spitalszeitung*, 1859, 3, and *Medizinische Central Zeitung*, March 23d, 1859.)

V.—*A Case of Splenic Leucocythœmia.* By PROF. OPPOLZER.

H. E., forty-five years of age, mother of five children, had, without any known cause, a chill in the month of August, 1857. The attack recurred the next day, then at the end of fifteen days; from that time the attack was repeated daily for eight days. The patient perceived, at the same time, that she had a tumor in her left hypochondrium as large as a fist.

In January, 1858, this tumor had acquired the size of a child's head, and had become painful. The patient felt well for six weeks, in February and in March, then the attacks of fever occurred frequently, and the spleen became the seat of a more intense pain. Sulphate of quinia was administered; the paroxysm returned then several times a day, without regularity; the patient had also an obstinate diarrhœa. On the first of April she entered the clinic of Professor Oppolzer.

The lymphatic glands of the neck and of the groin were somewhat swelled, the liver was very voluminous. The spleen extended from the seventh rib to the crest of the ilium and to about one inch above the symphysis of the pubis; above the umbilicus it reached the median line, while below this point it stretched beyond it; posteriorly it occupied the lumbar region, which felt very hard on palpation. The spleen had a smooth surface, and its blunt border presented several indentations toward the inferior extremity of the tumor; it was the seat of continual pain, which became more intense during the cold stage of the febrile paroxysm. Digestion was good during the apyretic state; the urine was slightly albuminous; the blood presented a buffy coat of remarkable whiteness, and below it white granules of the size of a millet-seed formed exclusively by white corpuscles. The clot was voluminous and red.

The febrile paroxysm and the pain in the spleen persisted in spite of the administration of forty-two grains of quinia within four days, and of several applications of leeches to the splenic region; the blood became gradually richer in white corpuscles. Fowler's solution produced no improvement.

On the nineteenth day after the admission of the patient, the spleen was found still augmented in size. Large doses of sulphate of quinia afforded a slight amelioration; salicin, administered in a dose of two scruples, produced no effect. Afterwards the patient was attacked with diarrhœa which yielded to the administration of extract of colombo, and of tannin. Ultimately, a thrombosis of the saphenous and crural veins was noticed. The patient died on the fourteenth of July, after a short agony.

M. Folwarczny made an analysis of the blood after Scherer's method. He found formic acid in all his specimens, lactic acid in the blood of the capillaries, of the median and supra-hepatic veins, and of the aorta; tyrosin and leucin in the blood of the aorta and of the capillaries; traces of uric acid in that of the jugular vein. The relative proportions of water and of solid constituents, of organic and inorganic matters, did not differ materially from those found in the normal state.

The blood contained, besides a great quantity of white corpuscles, free nuclei, quite analogous to those which are found in swelled lymphatic glands.—(*Wiener Allgemeine Medizinische Zeitung*, 1858, 29 and 32, and *Prager Vierteljahrschrift*, 1859, I.)

VI.—*On Nervous Vertigo*, (Prize Essay.) By DR. MAX SIMON, of Aumale.

The following is a short abstract of the treatise of Dr. Max Simon "on nervous vertigo," which obtained the prize from the Académie de Médecine of Paris.

After a long introduction, in which the author dwells, among other things, upon the fact that vertigo may sometimes be a mere neurosis, independent of material alterations of the brain or of other organs, the author proceeds to the classification of the varieties of the disease. He distinguishes (1) the *idiopathic* vertigo, that is, a mere neurosis, where neither in the nervous system nor anywhere else a statical or dynamical disturbance exists, upon which the vertigo may depend; and (2) the *sympathetic* vertigo which is owing to a functional disorder of some other organ, except the brain. The author agrees with P. Frank in defining vertigo as a sudden and distressing sham-turning which seems to seize one's own person and the objects surrounding it, no matter whether they are in rest or in motion, whereby the body staggers and threatens to fall.

(1.) The *idiopathic* vertigo occurs, like all neuroses, periodically, with complete intermissions between the attacks, during which not the slightest inclination to an attack is manifested. It is of different intensity, and occurs in various forms. It may seize the patient while standing, lying down, or while raising himself up from a stooping position. In the higher degrees of the affection, where either the cause acts more intensely or the nervous system is more impressible, the symptoms of anxiety are added, the sight becomes dim or is lost entirely, hemiopia or diplopia supervene, and the patient falls, but does not lose consciousness, or if he happens to lose it, the cause of it is anxiety rather than the functional disturbance of the brain with which the vertigo is connected. The same is true in regard to the confusion of thought which is sometimes observed, particularly in hypochondriac patients, and after strong emotions. Also in sea-sickness, disturbance of the senses is frequently observed. With such intensity of the affection the pulse too is accelerated without a corresponding increase of temperature; not uncommonly nausea and vomiting supervene, the latter, however, being more frequent in dyspeptic vertigo.

(2.) The *sympathetic vertigo of dyspepsia* does not differ from the other in regard to its symptoms; it is only considered separately on account of the frequency with which it accompanies those undefined disorders of digestion which are called dyspeptic. Its disappearance on the cure of dyspepsia proves its dependence on the same. Whether it is caused by too great an amount of acid, as Dr. Sandras believes, the author does not attempt to decide; it is at any rate easily cured by alkaline remedies.

(3.) *The vertigo in consequence of hypochondriasis, excess "in venery," and spermatorrhœa.* In hypochondriac patients vertigo originates partly from the disorders of the alimentary canal, so common in hypochondriasis, and partly depends upon the whole condition of the nervous system. The same is true in regard to many cases of sexual excess which may at first influence the stomach, and through the latter the brain. But at a later period it may also be produced by anæmia. In the earlier stages of the affection anæmia cannot, of course, be regarded as an explanation. In this variety of the disease we may consider the nervous excitement attending each coitus likewise a cause, which may operate just as much here as in abstinence.

(4.) *The vertigo of convalescence* depends only partly upon anæmia, partly upon the dynamic change of the nervous system caused by the altered crasis of the blood. That this is the case is evinced by the fact that vertigo does not occur equally after all diseases producing anæmia, but particularly after malignant fevers, such as typhus, being associated in this case often with mental disturbances.

(5.) *The vertigo at sea, sea-sickness;* the manner in which sea-sickness makes its appearance, as well as the influence which mental excitement sometimes has upon the disappearance of the disease, seem to indicate that it belongs to the varieties of nervous vertigo, and that it differs from the rest only by its violence.

The course of vertigo is various; the attacks are either short and often repeated, or they last longer and keep longer intervals; the disposition to the affection is either transient or lasts for life. In general, the vertigo disappears as soon as the cause of it is removed, or a short time after.

The prognosis is always favorable; those who entertain the opposite opinion, confound the vertigo with affection of the brain which may simultaneously exist.

In regard to differential diagnosis, it is necessary to distinguish the nervous vertigo from that resulting from anæmia, plethora, and organic diseases of the brain. Without regard to the well-known symptoms of anæmia, the anæmic vertigo differs from the simply nervous one by the frequent occurrence of syncope and tinnitus aurium as premonitory symptoms. The plethoric vertigo is characterized by the general symptoms of plethora; it is in this variety particularly that headache and a feeling of fullness in the brain are experienced, together with the various disturbances of the senses. The vertigo in diseases of the brain is distinguished by symptoms arising from the nervous system, especially, however, by the persistent headache. At the commencement, it is often difficult to recognize its nature, particularly if the stomach is sympathetically affected.

To these varieties belongs the syphilitic vertigo, which probably owes its origin, in most cases, to exostoses. Also the vertigo observed in cases of lead-poisoning finds its place here; it is easily discerned. With epilepsy nervous vertigo cannot easily be confounded.

In considering the etiology (1) of idiopathic vertigo, the author enumerates all the different exciting causes without saying a word about the internal causes common to the disease in general. They are quick motion of objects, or of one's own person, a glance into an interminable space, no matter whether the patient is upon the level ground or upon a high elevation, hunger, coffee, tea, beer, particularly if containing much hops, tobacco, hemlock, and vapor of burning coal. Hereditary disposition, mental excitement, sex, and age, are thoroughly considered. (2) About the causes of the sympathetic vertigo the author gives also but deficient information. In reference to sea-sickness he mentions that it is caused by the movements of the ship, by the glance into an interminable space, by anxiety, and by imitativeness. Children are, therefore, the less liable to sea-sickness the younger they are, because the mentioned causes do not act in their case, except the motion of the ship, which, however, is hardly to be taken into consideration in the case of very small children, as it operates but indirectly.

In regard to the treatment, the physiological vertigo, as it could be called, does not demand any medical interference; it yields to time and habit. The idiopathic vertigo requires regulation of the diet; the patient should not fast too long; his bowels should be kept regular; aromatics should be tried; also mental influences are of value: it is, however, difficult to say of what kind they ought to be. During the attack itself bodily and mental rest is to be enjoined; in case of fainting, we may have recourse to stimulants. The dyspeptic vertigo demands alkalies to correct the acidity of the stomach commonly present; they are, however, also otherwise useful. Other disorders of the stomach are to be met with the means appropriate to them.

The hypochondriac vertigo is to be treated like the idiopathic variety; at the same time the hypochondriac temper should be regarded. The same rules hold good for the vertigo from sexual excess; in this variety lupulina may be used with great advantage, as it allays the excitement which is the cause of the affection.

The vertigo, after serious febrile disease, rarely necessitates any treatment. Duchenne and Wedl have obtained favorable results from the use of cinnabar. In regard to vertigo after intermittent fever, it remains doubtful whether it is a symptom of miasmatic poisoning, or whether it is produced by the use of quinia.

and down upon deck, to eat moderately, not to look, if possible, upon the objects in motion, and to smell and to take stimulants. As soon as vomiting commences, the horizontal position should be kept. The arthritic vertigo, finally, demands, if it really exists, the remedies usually employed in arthritis.—(*Mém. de l'Acad. de Méd.*, XXI., 1858, and *Schmidt's Jahrbücher*, 1859, I.)

VII.—*Contributions to the History of Nervous Diseases of Syphilitic Origin.*

By DR. GJÖR.

The description of these diseases is based upon the accurate observation of thirty cases. Fourteen of the patients were less than thirty-five years of age, eleven were from thirty-five to forty years, and only one individual was more than forty-five years old.

In the great majority of the cases, the invasion of the disease was preceded by distinct prodromic symptoms; they consisted of pain in the lumbar region or in the extremities, or of an obstinate headache, with nocturnal exacerbations.

Most frequently the characteristic signs were of a paralytic nature; the symptoms which accompanied the commencement of the paralysis were in general not very serious, and rather fugacious; fifteen times attacks in the form of apoplexy occurred, but were of but little intensity; five times only these attacks gave rise to a complete loss of consciousness, and consecutively to weight in the head; twice the loss of consciousness was associated with convulsions; in two cases the apoplectiform attack occurred twice. Of these fifteen cases, there were only four in which the paralysis supervened suddenly, and without the health having been seriously impaired; in the eleven other cases it developed itself imperceptibly.

In half of the cases hemiplegia was noticed; eight times, paraplegia; twice, facial hemiplegia; in three cases, paralysis confined to one extremity; in two, a general weakness of the movements of the four extremities; in nine, anæsthesia; and in two cases, hyperæsthesia. The paralysis of the extremities was accompanied, in several cases, by paralysis of the sphincters, and in four cases by amblyopia, with dilatation of the pupil.

The interval which separated the first symptoms of constitutional syphilis from the paralytic attacks, was scarcely obvious in two patients; several months to a year, in eleven; one to five years, in eight patients. In the rest of the cases the appearance of paralytic symptoms was retarded still longer.

It seemed that the patients who had suffered from several relapses of the symptoms of constitutional syphilis were not any more exposed to the nervous diseases than those in whom these symptoms had been observed only once; the number of cases of the first category is, in fact, only ten in the statistics of Dr. Gjör; he observes, however, that the number of his cases is not sufficient to deduce from them unobjectionable conclusions.

The treatment of the nervous diseases of syphilitic origin has not given, up to the present time, very satisfactory results. Of the thirty patients of Dr. Gjör, only five were cured; in twelve a more or less decided amelioration was obtained; in six cases, no change took place, and seven times the disease had a fatal termination.

Dr. Gjör employed particularly the iodide of potassium, and often combined with it strychnia, or the preparations of arnica; this remedy has afforded him the most advantageous and prompt results. Mercury was employed in five cases, and was not successful in a single one. Dr. Gjör tried syphilization several times; in one case only it produced a rapid cure, in the six other cases it was not followed by any improvement: in all syphilized patients the state of the general health was, however, much improved.

The three autopsies reported by Dr. Gjör prove, at least, that nervous diseases of syphilitic origin are not always owing, as was formerly supposed, to exostoses situated in the cavity of the cranium or of the spine; in one case, Dr. Gjör found softening of the brain; in the two others no lesion of the nervous centres could be detected.—(*Schmidt's Jahrbücher*, 1859, CI., p. 929; from the *Norck Magazin*, XI., p. 794.)

VIII.—*On the Treatment of Chronic Organic Diseases of the Heart.* By PROFESSOR LEBERT.

The treatment of chronic organic diseases of the heart offers one of the most difficult tasks to the practicing physician; it is nevertheless certain that a proper and thorough treatment of these diseases may do a great deal toward alleviating the condition of the patients, and toward prolonging their lives. Prof. Lebert advises especially great care with blood-letting, purgatives, and all debilitating measures in the treatment of organic diseases of the heart. In valvular disease he employs venesection but very rarely. If in the course of the disease an acute inflammation, in the form of pericarditis or endocarditis, occurs, it is often useful to abstract blood to the amount of six ounces by means of cups or leeches; if, after this, an energetic treatment is still necessary—much advantage will be obtained from the application of a large blister, and the endermatic use of half a grain of morphia daily. The author's observations on the use of digitalis we may omit as generally known. Most allied to digitalis, in regard to its therapeutic effect, is aconite. Although it acts less heroically and more slowly than digitalis, and does not decidedly diminish the frequency of the pulse, aconite is nevertheless a remedy which is capable of lessening considerably the dyspnœa, palpitation, and the various subjective symptoms of the patient, even the tumultuous excitement of the heart. A very important point to be considered in the treatment of advanced diseases of the heart, is the general cachexia and debility of the patient, gradually developed. Lebert has examined for several years the muscular structure of diseased hearts, in order to see how far the gradual decrease of the functional capacity of the same depends upon changes in the muscular fibre itself. From these investigations it results that very frequently a small degree of fatty degeneration of the primitive cylinders of the muscle of the heart exists, even in cases where the color and consistency of it does not indicate the fact. The gradual increase of general debility and of the local weakness of the heart, the progress of anæmia and hydræmia, lead to the question, what effect tonics, especially iron, would have in organic disease of the heart.

The better the patients are nourished (with avoidance of strongly stimulating food) the longer they resist the evil influence of the disease; the patient should, Against sea-sickness no reliable prophylactic is known. It is well to walk up therefore, not be restricted to a vegetable diet, but a moderate amount of animal food should be allowed with it. Of beverages, tea, coffee, alcoholic liquors, and wine in large quantities ought to be avoided, whereas infusion of cocoa, or decoction of roasted acorns, are very appropriate, particularly for breakfast. Light beer, or small quantities of old wine mixed with water, may be allowed at the table. Besides an analystic diet, the use of iron is indicated, particularly in the later anæmic and cachectic period of the disease. Lebert recommends especially iron reduced by hydrogen, (gr. ij at each meal,) or twenty to twenty-five drops of the tinctura ferri pomati, if necessary, in connection with equal parts of tincture of aconite. The tartrate of iron and potassa (three to five grains three times daily) is a very useful preparation, and as the effect of iron is perceptible only then, when its use is persisted in for a long time, it is necessary, occasionally, to make a change in the preparation employed. The author has not derived much advantage from the application of blisters, setons, and moxas.—(*Wien. Medizin. Wochenschrift*, 1858, No. 51, and *Mediz. Neuigk.*, April 2, 1859.)

IX.—*Observations on the Diagnosis of Diseases of the Pancreas.* By PROF. OPPOLZER, of Vienna.

The most important diseases of the pancreas, evinced by anatomical changes, are scirrhus, atrophy, hypertrophy, acute and chronic inflammation. *Scirrhus of the pancreas* is much rarer than *scirrhus around the pancreas* (scirrhus circa pancreatem;) its diagnosis is therefore not easily established, and this difficulty is increased by the circumstance that the evacuation of fæces containing fat is not peculiar to diseases of the pancreas, as was formerly believed, but may also occur in affections of the mucous membrane of the duodenum, and that the digestion of amylaceous matter may be hindered without disease of the pancreas being the cause of it.

Atrophy of the pancreas has recently attracted much attention by its occurrence in diabetic patients, and by Bouchardat ascribing to these two diseases the relation of cause and effect. It is proved that atrophy of the pancreas may be also produced by impediments in the secretory duct, or at its mouth, such as obstruction of the duct of Wirsung by foreign bodies, further by biliary calculi, cancer, and the cicatrix of a perforating ulcer near the diverticulum Vateri. It is, however, impossible to diagnosticate atrophy of the pancreas from the symptoms which accompany the disease, such as pain in the region of the pancreas, fatty stools, and emaciation.

Enlargement of the pancreas may take place in consequence of the deposit of fatty matter, whereby the acini become compressed, and the whole organ is converted into a mass of fat. In this affection also no characteristic symptoms are known, not considering that it is quite impossible to diagnosticate a lipoma within the peritoneum.

The occurrence of *acute inflammation* of the pancreas has been wholly denied. Oppolzer himself, however, saw the organ in one case swelled, reddened, and with exudation between the acini, as in parotitis. The patient suffered from oppressive pain in the pit of the stomach, and tried to obtain relief from it by taking brandy and pepper. This was followed by vomiting and increase of the pain. The vomited matter consisted of mucus and bile. The patient had a violent fever, very frequent pulse, and cold extremities, his face was shrunken, and he suffered from obstinate constipation. There was no blood vomited; and the case was diagnosticated as one of perforating ulcer of the posterior wall of the stomach. On the third day after being admitted into the hospital, the patient died, and the post-mortem examination proved the stomach to be healthy; around the pancreas, however, and between the layers of the mesentery, a large effusion of blood was found; the pancreas itself was enlarged to double its size, of a dark-red color, and contained an exudation colored with blood between the acini.

Chronic inflammation of the pancreas was formerly diagnosticated very frequently; but it was usually confounded with perforating ulcers of the stomach. Chronic inflammation of the pancreas may, however, coexist with gastric ulcer, or with ulcer of the duodenum, and is then a secondary affection, the ulcer of the stomach or of the duodenum having formed adhesions with the pancreas. Prof. Oppolzer has observed a case of this kind; the patient, a girl, had suffered from a perforating ulcer of the duodenum, and on post-mortem examination adhesions between the ulcer and the pancreas were found.

For some time it was considered dangerous to suppress salivation produced by a mercurial treatment, as it was thought that such a measure would give rise to an undue secretion of the pancreatic fluid and to diarrhœa. Nothing, however, is known concerning the sympathy between the salivary glands of the mouth and the pancreas, as to whether diseases of the pancreas usually cause diarrhœa.

In regard, finally, to determining the position of the pancreas by percussion, it would not be impossible to feel it in the abdominal cavity, if the abdominal parietes were relaxed, and under normal conditions; but for estimating the size of the pancreas, and for drawing conclusions in regard to its diseases, there is exceedingly little to be gained by percussion.—(*Allg. Wiener Medizinische Zeitung*, and *Medizinische Neuigkeiten*, April, 1859.)

X.—*Memoir on the Oxalate of Lime in the Sediments of the Urine, and on the Gravel and Calculi of Oxalate of Lime.* By M. GALLOIS. (Read before the *Académie des Sciences* of Paris, April 4th, 1859.)

The following propositions contain the substance of M. Gallois's memoir:—

1. Oxalate of lime is a substance which may be found transiently in the urine of the healthy individual, at all ages and at all periods of life.

2. It makes its appearance in more or less considerable proportions, especially under the influence of certain aliments, and probably of certain medicines.

3. Oxalate of lime is frequently met with in the urine of the sick, but its excretion does not constitute a disease by itself. Oxaluria is thus not a morbid entity, but only a symptom common to very different affections. Nevertheless, it is proper to state that oxaluria is observed oftener in spermatorrhœa, and in certain diseases of the nervous system, especially in dyspepsia.

4. There is a body which very frequently accompanies oxalate of lime in the urinary sediments, as well in gravel as in calculi; this body is crystallized uric acid.

5. The very common coexistence, in the urine and urinary concretions, of uric acid and oxalate of lime, seems to me to explain the formation of the oxalate of lime within the organism.

6. The relation which pathologists have endeavored to establish between oxaluria and diabetes, is not admissible.

7. Oxalic acid (and consequently oxalate of lime) seems to be derived from uric acid, and ought to be considered as an advanced degree of oxidation of the latter body, or of the elements which serve to constitute it; thus whenever there is uric acid in the economy, or the elements which are necessary to form it, oxalic acid can be produced under the influence of a more advanced oxidation which takes place in the blood.

8. Oxaluria demands, ordinarily, no other treatment than that of the physiological or morbid condition with which it is associated. A great variety of remedies have been advised in the treatment of oxaluria:—First, abstinence from aliments and medicines containing oxalic acid; second, the use of small doses of nitromuriatic acid in a bitter and tonic infusion, of nitrate of silver (in gravel,) of colchicum (in certain cases,) or of phosphate of lime, etc.

9. For my own part, I have found that the alkaline mineral waters constitute the most efficacious means to prevent the excretion of the oxalate of lime, particularly if it is accompanied by a deposit of uric acid, a condition which seems to me the most frequent of all.—(*Archives Générales*, May, 1859.)

XI.—*Asbestus as an Irritant Application to the Skin.* By DR. V. KLETZINSKY.

The study of a chemically indifferent but powerful mechanical irritant to the skin would certainly be of great service in regard to the treatment of cutaneous diseases and ulcers. An irritant of this description, which has been either unknown or unnoticed until the present, is asbestus, reduced to a very fine powder. In order to prepare it, common asbestus (as found in the market) is boiled with an excess of dilute hydrochloric acid, collected afterwards upon a percolating cloth of dense texture, and washed thoroughly with water; the pap of asbestus is put, still moist, into a mortar of serpentine-stone or porcelain, mixed well with water, and washed. The deposit of the slime of asbestus is then dried and kept for use. The chemical composition of this silicate of magnesia excludes the possibility of chemical action being concerned in the therapeutic effect produced by it; and with no other substance of equal therapeutic applicability is this so much the case. Dr. V. Kletzinsky made the accidental discovery that this chemically inert substance produced mechanically a very powerful effect, which he explains by the circumstance that the very fine and short fibres of the asbestus act in the manner of the hairs of caterpillars and of the pubescent glands of certain plants, by hooking themselves into the pores of the skin, or into the raw surface, thereby producing a permanent and purely mechanical irritation. The author thinks it probable that the application of asbestus to ulcerous and diseased parts of the skin would produce in some cases a very favorable result, which, with the use of other remedies, would have been ascribed to chemical action. The experiment of applying asbestus in the proposed manner would be at any rate serviceable, in so far as it would enable us the better to distinguish whether the curative effect of certain remedies is owing to mechanical or chemical agency.—(*Zeitschrift für Praktische Heilkunde;* Wien, 1859, 6.)

XII.—*Easy and Certain Cure of Facial Neuralgia.* By DR. BURDACH, of Luckau.

Dr. Burdach recommends corrosive sublimate as a specific, never-failing remedy, in cases of facial neuralgia. He has used it for more than thirty years, and always obtained a prompt and permanent cure, no matter how severe a form the disease had assumed. The formula he employs is the same which he recommended in *Hufeland's Journal* for 1826 and 1830, in the treatment of rheumatic gout; it is the following:—

℞.—Liquor. Hydrarg. Bichlorid. corrosiv. (Pharmac. Boruss.) ℥jss;
Vini Semin. Colchici, ℥ss.—M.
S. Thirty to sixty drops every two hours.

Cases requiring the latter dose were extremely rare. (The Liq. Hydrarg. Bichlorid. corros. of the Prussian Pharmacopœia contains corrosive sublimate and hydrochlorate of ammonia, one grain of each to the ounce of water.) Each dose of the medicine should be followed by a draught of the decoction of the Species ad Decoctum lignorum; (the species ad decoct. lignor. consists of Guaiacum-wood, two parts; Lappa, and Saponaria, one part of each; Liquorice-root and Sassafras, half a part of each. One ounce of this mixture is used to a pint of water.) There is about one-thirtieth to one-fifteenth of a grain of sublimate given in each dose, a quantity which is generally well borne by the patients. In order to assist the cure, Dr. Burdach sometimes ordered the local application of veratria ointment, but in the generality of cases it could be dispensed with, as the sublimate acted promptly enough without it. In very sensitive patients, acetic acid, chloroform, or tincture of opium, might be added to the given formula; such an addition, however, is not to be recommended.

To obtain the prompt action of the remedy it is absolutely necessary to give it in fluid form, and at the intervals prescribed above, for in the form of pills it seems to exercise but little control over the disease.—(*Medizinische Central Zeitung*, December, 1858.)

XIII.—*Gunpowder, a Remedy for Toothache and for Scabies.* By M. LAFFONT.

All remedies are good, if they cure. M. Laffont recommends his patients to put a teaspoonful of powder into a piece of fine linen, and to apply this little bag to the painful tooth. He has employed this remedy in twenty cases. All the patients told him that it provoked, but only for a few instants, a slight pungent heat in the mouth, but that the toothache completely disappeared.

M. Laffont learned from a traveler, that gunpowder was much used in the colonies against scabies. Three parts of powder, incorporated with ten parts of molasses, constitute a mixture, which is rubbed well on the whole body; the next day a bath is taken in water impregnated with soap, and the cure is finished. M. Laffont has used this friction in three cases of scabies, and has cured them radically.—(*Journal de Médecine de Bordeaux*, October, 1858.)

XIV.—*On the Therapeutic Action of Solanin, and of Dulcamara.* By PROF. CAYLUS, of Leipsic.

In order to examine into the facts already known in reference to the physiological and therapeutic action of dulcamara, and of its active principle, solanin, Prof. Caylus has undertaken a series of experiments which have led to the following conclusions:—

Solanin and dulcamara belong to the class of acrid narcotics, as far as they exert a paralyzing influence upon the medulla oblongata, and an excitant action upon the nerves; they cause death by producing paralysis of the respiratory muscles, their action being analogous to that of conicin, and of nicotin. They distinguish themselves, however, essentially from these substances, by not augmenting the sensibility of the cutaneous nerves, and by not exercising an instantaneous action upon the stomach and alimentary canal.

They differ from atropin, daturin, and hyosciamin, by the absence of delirium and stupor, of dilatation of the pupils, and of paralysis of the sphincters; from atropin in particular, by not producing pneumonia.

These substances possess therapeutic virtues in the spasms, and states of irritation of the respiratory organs; simple spasmodic cough, hooping-cough, and spasmodic asthma.

Their therapeutic action in certain diseases depending upon a dyscrasia of the blood, such as gout, rheumatism, constitutional syphilis, and perhaps also in certain chronic diseases of the skin (acne, eczema, ecthyma, impetigo,) may be owing to an increase of the excretion, by the veins, of certain constituent parts of the blood, and not to an excitation of cutaneous activity.

Contrary to the opinion generally entertained, solanin and dulcamara can be given without danger in inflammatory states of the stomach and alimentary canal, as they exert no action on these organs.

Inflammation of the respiratory passages does not offer a contra-indication to the use of solanin and dulcamara in the diseases of these organs; but if there is inflammation of the kidneys the contra-indication exists.

The medium dose for an adult is about one-sixth to three-quarters of a grain of acetate of solanin, a substance which Prof. Caylus prefers to the pure alkaloid on account of its greater solubility. The most convenient form in which to administer it is that of pills, the solution of the salts of solanin having a very disagreeable taste.

The extract obtained with alcohol, and afterwards washed with water to remove the alcohol, is preferable to the aqueous extract generally employed; it contains fewer mucilaginous substances and indifferent extractive matters than the latter, is more concentrated, and its dose can be more accurately determined.—(*Reil and Hoppe's Journal für Pharmako-dynamik*, and *Archives Générales*, March, 1859.)

XV.—*Employment of Iodoform as an Anæsthetic Agent.* By M. E. FRANCHNO.

The local anæsthetic action of iodoform has been repeatedly pointed out of late; some treatises published on this subject (*Bulletin de Thérapeutique*, January, 1857, and *Union Médicale*, October, 1857,) have induced M. Franchno to investigate whether the same agent could not be employed by inhalation. It is known that iodoform is not, like chloroform, a liquid which evaporates at a low temperature; it fuses only at 115°, and is sublimed at a little higher temperature; and although it disengages vapors at the common temperature of the air, as its saffron-like odor proves, it was not expected that inhalation under these circumstances would produce any sensible effects. The results announced by M. Franchno are thus of a nature to surprise us; but as it would be too great a skepticism to put them in question we will recapitulate them in a few words.

The apparatus employed by the author consists of a hollow ball containing a sponge sprinkled with iodoform, and provided with two openings; to one of them a muff is adapted, to be applied to the mouth; to the other a tube of the diameter of the trachea, destined to give passage to the air. Two grammes of iodoform suffice, generally, in animals, to produce anæsthesia in one and a half to two minutes.

The phenomena which reveal the action of the iodoform can be divided into two periods, analogous to those which have been established for most anæsthetic agents: in the first, agitation, contraction of muscles, acceleration of respiration and of circulation take place; in the second, calm, relaxation of the muscles, respiration somewhat slower, never stertorous; no disturbance of the circulation, complete anæsthesia which lasts four to five minutes after the cessation of the inhalation, then prompt restoration to the normal state.

M. Franchno has administered these inhalations only to animals. In regard to the question whether analogous results would be obtained in man we remain in doubt, as the three experiments reported by the author have been made on very small animals—a hen, a pigeon, and a rabbit; we know in addition to this, that rabbits are excessively sensitive to the action of anæsthetic agents.—(*Gazzetta Medica Italiana Stati Sardi*, 1858, 28, and *Gazette Hebdomad.*, April 8, 1859.)

XVI.—*On the Use of Alkalies as a Means of Obtaining the Extractive Principles of Vegetables.* By M. Dannecy, of Bordeaux.

M. Dannecy found that in the treatment of intermittent fever in which sulphate of quinia proved to be inactive, a number of empiric preparations were successfully employed, in which quinia was invariably combined with carbonate of potassa. This clinical result induced M. Dannecy to investigate in what the action of the alkaline carbonate consisted, and he came thus to the conclusion, that the alkalies (potassa or soda) were the most powerful adjuvants in obtaining the extractive principles of vegetables. He proposes, therefore, to add a small quantity of these substances to the water, in making pharmaceutical preparations, in order to increase the activity of the latter.

Cinchona bark treated in this manner furnishes extracts which have but little taste, and M. Dannecy believes that this circumstance would render them preferable to the ordinary extracts, particularly in the treatment of diseases of children.

For those vegetables which contain astringent principles among their elements, the addition of an alkali presents another advantage of great importance; it prevents, during the evaporation of the liquids, the formation of the body called *apotheme*, which is believed by pharmacologists to be the result of the oxidation of the extractive principle.

The preparation of the extract of rhatany, which offers this phenomenon in so high a degree, is protected from it completely by the addition of a small proportion of alkali to the water which serves to prepare it; and the evaporation in the open air does not furnish the smallest quantity of this insoluble principle which, in the preparation of the extract by the ordinary method, diminishes so sensibly the proportion and the quality of the extract soluble in the cold.

According to some experiments made on nux vomica and cinchona, M. Dannecy is inclined to believe that the process of extraction by the alkalies is destined to become a prompt and economical means to obtain not only strychnia and quinia, but also other immediate principles which have not yet been isolated. —(*Bull. de Thérap.*, and *Journal de Pharmacie et de Chimie*, March, 1859.)

XVII.—*Antidote to Phosphorus.* By MM. ANTONELLI ET BORSARELLI.

Poisoning by phosphorus has become frequent, since the lucifer matches which contain this dangerous substance have been introduced into general use. Numerous experiments have proved to MM. Antonelli and Borsarelli:—

1. That in poisoning by phosphorus or by substances containing this metalloid body, it is above all necessary to avoid the use of fatty matters; as, far from opposing the action of phosphorus upon the organs, they only augment its energy and facilitate its diffusion in the economy.

2. That calcined magnesia, suspended in boiling water and administered in great quantity, is the best antidote, and at the same time the most convenient purgative to facilitate the elimination of the toxic agent.

3. That in cases of poisoning by phosphorus, in which dysuria is present, the use of acetate of potassa is of great service.

4. That the mucilaginous drinks administered to the patient should be prepared with boiling water, in order to have them contain the least possible quantity of air.—(*Union Médicale*, 1859, No. 10.)

DISEASES OF WOMEN AND CHILDREN.

BY EMIL FISCHER, M.D.

I.—*New Theory and Treatment of Chlorosis.* By DR. VON MAACK.

The glycogenic function of the liver is hardly made known, and already pathologists hasten to assign to it a part in the pathogeny of diseases. Although we receive the ideas of the author with the greatest reserve, we republish his theory in order to illustrate this scientific tendency, common to all ages.

"The diminution of the red corpuscles in the blood of chlorotic patients," says the author, "is an established fact. These corpuscles owe their color to the iron which they contain; it is, therefore, evident that the quantity of this metal in the blood is diminished in cases of this kind. This diminution is not the result of resorption, for the urine contains only a small quantity of solid matter, but it is the consequence of bad elaboration.

"We know also that the very small quantity of iron which the organism in the healthy state draws from the ingested aliments is quite sufficient for all its wants, and that the bile is the only secretion which contains it in notable quantity.

"This being known, how do we explain the formation or development of chlorosis in a young woman who enjoyed good health previously? She takes the same aliments after the appearance of the disease as before; it is, therefore, impossible to attribute this affection to a privation of the ferruginous element, for, afterwards, as before, the same quantity of it is absorbed, and has sufficed for many years to maintain health.

"The real cause is more likely this, that it is impossible for the organism to transform the iron into hematin and to fix it. From what does this impossibility arise? M. Lehmann has proved that hematin, like salicin, phloorrhizein, etc. is a saccharine compound. Hematin needs, therefore, sugar for its formation. Thus, as soon as the saccharine secretion of the liver is diminished or arrested, the formation of the coloring substance of the blood will cease, and consequently that of the red corpuscles.

"The true origin of chlorosis would, consequently, be the want or the diminution of the quantity of sugar elaborated by the liver."

The author draws the following conclusions from his premises:—

1. The treatment of chlorosis must consist in the use of sugar. 2. The object of the treatment must be to re-establish the saccharine secretion of the liver. 3. The medication which consists in the abundant use of iron has not introduced into the organism an element which was wanted there, as is believed, but has cured by acting upon the healthy secretion of the liver.

The best remedy, according to Dr. Von Maack, consists in the use of grape-sugar and of honey. This treatment of chlorosis, it seems, has been practiced for a long time by the people in the northern part of Schleswig, and of certain regions of Hanover. An adjuvant to it is cold water used freely as a drink; already Petter has recommended it as excellent in diabetes. (*Archiv für Wissentschaftliche Heilkunde*, and *Union Médicale*, February, 1859.)

II.—*Memoir on the Hypertrophic Elongation of the Cervix Uteri.* By M. Huguier. (Presented to the *Académie de Médecine* of Paris, March 8, 1859.)

In a meeting of the *Académie de Médecine*, held on the 15th of March, M. Huguier read the principal passages of the last part of his memoir on the hypertrophic elongation of the neck of the womb. The following conclusions contain the substance of his treatise:—

1. Falling of the womb, be it complete or incomplete, is not a disease by itself, but rather an ensemble of several affections designated by a single name.

2. When the uterus protrudes externally, even then, when the vagina is completely inverted, and the womb, from the volume of the tumor, the centre of which it occupies, seems to be entirely prolapsed between the thighs, it is not, in the very great majority of cases, because the whole organ is fallen and has

completely left the pelvis, but because it has undergone a partial or general hypertrophic elongation.

3. In the affection designated by the name of prolapsus, the hypertrophic elongation is not the exception, but the very general rule.

4. Two principal varieties of longitudinal hypertrophy, the *sub* and the *supra-vaginal,* which constitute, in some measure, two different diseases, may simulate procidentia and prolapsus uteri.

First Part. 5. In the first variety of elongation, the neck of the womb forms in the cavity of the vagina a cylindroid or conoid more or less elongated projection, the free extremity of which approaches the opening of the vulva, or protrudes even between the labia of the part, without the vulvo-uterine canal being shortened, invaginated, or inverted upon itself.

6. It has been until lately confounded with procidentia and prolapsus of the womb, if it was not mistaken and treated for a polypus, chronic inversion, a follicular cyst, scirrhus of the neck, or dropsy of this part.

7. A complete description of it has not yet been given, although it has striking characters with regard to its development, its symptoms, and its treatment.

8. Medicines, and the different varieties of cauterization, are only applicable to slight hypertrophy, and that complicated with inflammation and congestion.

9. Pessaries are mostly useless and dangerous.

10. When the hypertrophic elongation of the cervix uteri gives rise to serious symptoms, and if it has attained a length of five to seven centimeters, there is only one truly efficacious and curative measure to be employed—that is, resection of the neck, half a centimeter below the insertion of the vagina.

The author has reported in his treatise seven cases which corroborate this statement.

Second Part. 11. The disease designated, until the present, by the name of complete prolapsus, or falling of the womb, is generally nothing else but a longitudinal hypertrophy of the supra-vaginal portion of the organ, the body and fundus of which have remained in the cavity of the pelvis, although the vagina may be completely inverted, and the tumor hanging between the thighs may be of equal or greater length than the uterus in the normal state.

The accuracy of this proposition is proved by historical researches, pathological anatomy, and clinical facts.

12. The cases of hypertrophic elongation of the supra-vaginal portion of the neck, which we find here and there reported by the authors of the last two and the present centuries, have been left unnoticed, and were until the present time completely lost to science. The authors themselves have not drawn any practical conclusions from these cases, and have always confounded this affection with real prolapsus of the uterus.

13. There is scarcely any work in which we find the unexceptionable proof, by symptoms and pathological anatomy, that the complete prolapsus of the uterus exists.

14. On the contrary, the anatomico-pathological facts which we have described, those which several of our colleagues have, since our observations, demonstrated to the *Société de Chirurgie,* and those contained in the museum

of Dupuytren, prove the frequency of hypertrophic elongation, and of the falling of the neck alone in the affection called prolapsus of the womb.

15. The longitudinal hypertrophy of the supra-vaginal portion of the neck, and the falling of the womb, have different pathological and semeiotic characters which serve to distinguish these two affections.

16. The relaxation, weakness, and forced distention of the large or the round ligaments, do not contribute in a really efficacious manner to the falling of the uterus any more than the destruction of these ligaments; such is not the case with the analogous alterations of the utero-lumbar (utero-sacral) ligaments.

17. In treating this affection, we should resort to a bloody, or properly so-called surgical operation, only when it gives rise to serious symptoms, and we are certain that medical and prothetic means are insufficient.

18. All the operations which have been invented up to this day, in order to fulfill the therapeutic indications of the disease, are insufficient. They can be useful in the case of simple falling of the uterus without hypertrophic elongation, and in this respect should not be discarded from science.

19. In the hypertrophic elongation of the neck, which is followed by prolapsus of this part and by inversion of the vagina, the only operation which fulfills the principal indications, and may be followed by success, is the amputation of the neck above the insertion of the vagina, more or less near the body of the organ, according to the degree of the elongation.

20. This operation must never be performed without precautions against the consecutive inflammation having been previously taken. These precautions must be carefully continued for fifteen or twenty days after the operation.

21. The arteries of the uterine tissue are seized and ligated with great difficulty; in order to do it promptly and surely, it is necessary to use a kind of tenaculum, which is to be left in place until it falls spontaneously.

22. The *écraseur linéaire* has appeared to us useful for terminating the section of the neck, particularly if this part is very vascular.

23. If the disease is preceded by a rectocele or a voluminous cystocele, or by both affections at the same time, it may be necessary, after having amputated the neck, to operate separately on the hernia of the rectum, and of the bladder, as we have done several times with success.

24. The operation is contra-indicated, if there exist at the same time a very large pelvis and vulvar opening, a more or less torn perineum, and a considerable weakness of all the soft parts which form the floor of the pelvis.

25. If we do not operate under conditions indicated in the preceding conclusion, the disease is not liable to a relapse, and the health of the patient becomes as good as it had been before the development of the affection. (*Gazette Hebdomadaire*, March 18, 1859.)

III.—*On the Origin of Flexions of the Uterus.* By PROF. VIRCHOW.

Virchow sums up his very elaborate treatise on the mode in which flexions of the uterus originate, in the following propositions:—

In the history of flexions we may distinguish three different periods: one of mere predisposition, one of simple flexion, and one of flexion complicated with different inflammatory processes.

The predisposition is frequently created by partial peritonitis; it manifests itself by attacks of the nature of colic, and is at least somewhat lessened by early attention.

Long-continued retention of the urine and of the fæces favors the formation of flexion, particularly at the time of menstruation, the puerperal state, etc., and is, therefore, to be carefully avoided. Enlargements of the uterus, particularly if connected with relaxation of the organ, can increase the flexion very rapidly, while the removal of these conditions, for instance in chronic endometritis, may diminish the flexion to a considerable degree. It is, therefore, of great consequence to keep careful watch over the menstrual and puerperal periods, and to allay catarrhal inflammation of the uterus by antiphlogistic treatment and other means.

It is very questionable whether antiflexion can be completely removed; in retroflexion a cure may be attempted. If the flexion is complicated with consecutive affections, particularly with endometritis or perimetritis, a persistent and careful local treatment is requisite. Endometritis may be removed by it; perimetritis, on the contrary, produces adhesions of the uterus, which confirm the flexion more and more the longer they exist, and render it almost impossible to correct the position of the organ.—(*Allgemeine Wiener Medizinische Zeitung*, 1859, 6.)

IV.—*On Inflammation of the Fallopian Tubes as a Cause of Puerperal Peritonitis.* By PROF. E. MARTIN.

In one of the meetings of the *Gesellschaft für Geburtskunde* of Berlin, Prof. E. Martin gave a very interesting lecture on inflammation of the Fallopian tubes as a cause of puerperal peritonitis. An experience of many years has convinced Prof. Martin that—with the exception of severe injuries of the genitals during the act of labor, which may cause the death of the patient in different ways within the first few days—the most common cause of death among lying-in women is pyæmia and emboly, which may be either produced by thrombosis of the veins of the uterus and of the vagina, or by the reception and generation of pus in the lymphatic vessels of the genitals, and which give rise to fever and a great variety of symptoms.

Besides this kind of puerperal disease, the author has, however, observed another less frequent, but just as fatal a one, which depends upon *a propagation of the endometritis into the Fallopian tubes, and an effusion of the purulent products of this salpingitis into the peritoneal cavity.* This effusion of the contents of the Fallopian tubes into the cavity of the abdomen is followed in most cases by fatal peritonitis. In spite of the open abdominal end of the tubes, their contents are not generally discharged at once into the peritoneal cavity, but only after some unusual movement, etc., during which the abdominal muscles contract and press upon the tubes; this is easily explained by the fact that the external portion of the canal of the tube enlarges itself into a sinus as soon as fluids accumulate within the tube. According to the author's opinion, the metrosalpingitis observed in lying-in women does not always originate first during confinement, but sometimes during pregnancy, and occasionally even previous to that. One of the principal circumstances which speak for the long existence of the catarrhal inflammation of the tubes, is the considerable enlargement and textural change of the canal, as the author has observed it in all his cases in which a post-mortem examination was made; also in unimpregnated women Prof. Martin has observed this affection; it was then the consequence of a metritis produced by a gonorrhœal infection; after the painfulness of the vaginal portion had disappeared, and nothing remained but a muco-purulent discharge, a lively pain was again felt in the depth of one or the other inguinal regions (without there being any swelling of the adjacent ovary perceptible;) this pain was increased on pressure; it generally yielded to the application of leeches cataplasms, and tincture of iodine. As adhesions of the tubes to neighboring organs are a post-mortem appearance, frequently found in prostitutes, there is good reason to assume that salpingitis often occurs in consequence of sexual excitement, particularly if the latter is combined with infection.

As regards the symptoms of metrosalpingitis, the principal one, in the acute form of the disease, is pain; this is of pretty intense character, and is felt in both inguinal regions, if the disease exists on both sides, as it usually does. The seat of the pain offers the principal reasons for suspecting the presence of the disease, and, by resorting to the method of exclusion, this diagnosis may be rendered more probable. Sometimes it is possible to feel on external, but particularly on internal, exploration, the swelled and enlarged tubes in the form of oblong rolls. The disease under consideration requires, however, during the first days of confinement, the greatest precaution in making palpation, as each strong pressure is connected with the danger of effusion taking place into the peritoneal cavity; it is, therefore, often necessary to be satisfied, under these circumstances, with an only conjectural diagnosis.

The prognosis of metrosalpingitis in lying-in women is not unfavorable as long as the products of inflammation remain in the cavity of the tube, as a part of them may be removed by absorption, while the rest becomes concrete; there are also, in the generality of cases, adhesions formed between the respective tube and the neighboring organs. Both these changes are generally followed by sterility. In connection with this subject it is well not to overlook the possibility of the products of exudation undergoing tubercular degeneration; in fact, tubercular masses are more frequently met with in the Fallopian tubes than in any other part of the female organs of generation. Sometimes, when the abdominal opening of the tube has been closed by adhesions, dropsy of the tube follows. With all this, life may continue for a long time, although it may be accompanied by various troubles, arising principally from the incurable changes of form and position which the internal genitals have been subjected to. Sometimes, finally, after the dilated tube has formed adhesions with the abdominal parietes, its secretion may be discharged externally, and thus health may be restored to some degree. If the contents of the dilated tube are effused into the peritoneal cavity the preservation of life seems to be possible only when the secretion is not of a purulent, but of a mucous character, and when the consequent peritonitis remains confined to a certain locality. Of this the author has convinced himself in several cases, in which, on the post-mortem examination of individuals who had suffered, many years before their death, from puerperal peritonitis, membranous adhesions of the tube and of the ovary were found confined to only one-half of the cavity of the pelvis.

The treatment of metrosalpingitis in lying-in patients must be antiphlogistic; the principal condition for recovery is, of course, long-continued rest in one position, and the avoidance of every movement requiring exertion.—(*Monatsschrift für Geburtskunde*, 1859, XIII. 11.)

V.—*Observations on the Treatment of Diphtheritic Angina and Laryngitis in Children.* By DR. HAUNER.

Both diseases occur only in feeble children, debilitated by previous diseases, mostly, however, in such who have suffered either recently or some time previously from an exanthematous disease. Diphtheritis is contagious, and can be transmitted from sick to previously healthy children; it may become fatal by general infection, pyæmia, or loss of strength, as well as by propagating itself to the larynx, bronchi, and lungs. That treatment will alone be successful which endeavors to stop the progress of the diphtheritic process to important organs, anticipating it, as it were, by local means, and which tries to strengthen the constitution by internal remedies. The antiphlogistic treatment is decidedly obnoxious. Of all local remedies the author considers nitrate of silver the most efficient; he applies the caustic in substance to the diphtheritic layers in the mouth, on the uvula, throat, etc., and takes care to carry the application somewhat beyond the diseased surface. Instead of the stick, a strong solution of nitrate of silver (℈j–ʒss to ℥j of distilled water) may be used. In regard to the prophylactic value of this local treatment the author observes, that he has not seen a single case of diphtheritis of the mouth and throat in which the disease spread and reached the larynx after having been thus treated. But even in diphtheritic croup nitrate of silver is useful in combination with the internal treatment; the application is, in this case, made by means of a whalebone probang having a pencil of charpie attached to its extremity, or finely-powdered lunar caustic (gr. iij–iv) quickly blown in through a quill, the tongue being depressed by a spatula. In some cases the author precribed, at the beginning of the disease, an emetic of ipecacuanha, and found it decidedly useful. In regard to the internal treatment of diphtheritis, it is particularly necessary to enjoin a generous diet, (good broth, Liebig's extract of meat, coffee, beer, wine, etc.) The best internal remedy is quinia, given with alternate doses of chlorate of potassa, (ʒss–j to ℥iij–iv of distilled water;) the latter remedy exerts a very favorable influence upon the local diseases of the mouth and throat. A useful adjuvant in the treatment of diphtheritic angina and laryngitis is the local application of moist heat by means of compresses soaked in water, and covered over with a dry linen cloth, or other material to retain the heat and moisture. The author finally cautions against the treatment of diphtheritic croup by bleeding, mercurial ointment, calomel, tartar emetic, etc. By making a careful examination of the patient, and by taking the constitution and the previous history of the child into consideration, it will not be difficult to distinguish diphtheritic from true laryngeal croup.—(*Œsterreichische Jahrbücher für Kinderheilkunde*, 1859, II. 2.)

PHYSIOLOGY.

BY S. WEIR MITCHELL, M.D.,

LECTURER ON PHYSIOLOGY IN THE PHILA. MED. ASSOCIATION.

I.—*Rhythmical Contractions of a Voluntary Muscle, the Peroneus Brevis, of the right side.* By Jobert, (de Lamballe.)

This curious case, reported by Jobert, (de Lamballe,) has considerable interest, as illustrating the mechanism of "knockings," and as showing that a voluntary muscle may exhibit, pathologically, a rythmical contraction so regular as to resemble in this respect the heart-pulse itself. The disease was of six years duration, and was characterized by blows ("battements") which were heard behind the right external malleolus. On a level with the malleolus, and at its posterior border, a regular pulsation could be felt, accompanied by a momentary lifting up of the soft parts, and followed by a dry sound at the close of each muscular contraction. This sound could be heard at some distance, and at all hours, whether the patient was on foot, in or out of bed, awake or asleep. After describing the mechanism of these pulsations, and alluding to the "rappings," M. Jobert remarks that this case shows how, under the influence of muscular contractions, the displaced tendons can produce sounds, at the moment they fall back into their bony channels, which would be, for some persons, "spiritual knockings."

The author demonstrates also that, by practice, any man can acquire this accomplishment, and he recalls the ingenious experiments of M. Schiff, which are already known to most of our readers. M. Schiff considered that all of these sounds were caused by the tendon of the peroneus longus, and that in such persons as possessed the power of "rapping" there was either a weakening or a complete absence of the common sheath of the long and short peronei muscles. M. Jobert admitted the return of the tendon upon the bony gutter as the cause of the sound, but did not think it necessary to presuppose any anomaly in regard to the sheath. M. Velpeau remarked, that these sounds could be produced in many regions, as the hip, the shoulder, or the inner side of the foot. The tendon of the long portion of the biceps muscle produced the sound in question with facility whenever the fibrous bridles which usually retained it in place were relaxed or broken.

M. Jules Cloquet recalled the case of a young girl whose father intended to exhibit her in public, announcing that she had a clock in her stomach. By a slight movement of rotation in the lumbar region of the spine, she produced strong crackling sounds, more or less regular. These noises were audible at the distance of twenty-five feet, and resembled the sound of an old turn-spit or jack.

M. Jobert saw little analogy between this case, where the sounds were produced at will, and that of his own patient, in whom they were regular and involuntary. At the same time he stated, that the situation of the peroneal tendons is so favorable to the production and voluntary control of these sounds, that persons have, by long practice, been thus enabled to execute melodious airs, as the Marseillaise, etc. etc. with perfect regularity, and by the sole aid of the clacking noise caused by displacing and restoring the peroneal tendons.—(*Gazette Hebdom. de Med. et de Chirurgie*, vol. vi. No. 17.)

II.—*Cause of the Tendency of Red-blood Corpuscles to arrange themselves in Piles.* By C. ROBIN

In an interesting paper upon the anatomy of the blood corpuscles, M. Robin thus speaks of the numulated arrangement so often noticed in recently drawn blood:—"This fact has in it nothing which allies it to the vital properties of the anatomical elements in question. It is only a consequence of a commencement of alteration in the blood globules placed outside of the vessels and in a serum which is slightly modified." M. Robin then affirms, that whenever the phenomenon of coherence is seen it is due to a viscous and tenacious transparent matter, which is exuded from the globules, and holds them together when the currents in a drop or in a bowl of blood bring them into contact face to face. To prove the existence of this tenacious layer, M. Robin relies upon these facts:—When the piles of corpuscles are formed as usual, it is possible to break them up by pressing upon the cover glass, when they will separate and at last reunite to other corpuscles, so as to make new groups. When this manœuvre is made with moderate force, it will be seen that there is some difficulty in completing the separation. The globules glide on one another, until they are attached only at the edge, the two globules elongating under the pressure employed. When at length the separation is complete, so that a distinct space exists between the two globules, they will reapply themselves one to the other, as before, if the pressure ceases. It is evident, therefore, that while thus to appearance separated the globules are bound together by a perfectly transparent, but glutinous matter. In some lights and by proper management, it is even possible to see the viscous substance in question. M. Robin thinks that this viscous exudation is due to a slight concentration of the serum in which float the globules.—(*Jour. de Phys.*, April, 1858.)

III.—*Relative Temperature of the Submaxillary Saliva and that of the Blood of the Carotid of the same side.* By C. LUDWIG and A. SPIESS.

By the use of a thermo-multiplier, MM. Ludwig and Spiess have found that if the nerves of the submaxillary gland are galvanized, the temperature of saliva which escapes from its duct is 1·8° F. above that of the carotid arterial blood of the same side. Connecting this with the recent discoveries of Bernard, we perceive that the secreting action of this small gland causes a notable rise in temperature. At the same time there is a diminution in the formation of carbonic acid, as is shown by the fact that during this over-activity of secretion the venous blood of the gland remains red and almost as much charged with oxygen as arterial blood,—another fact to be added to those which already show how insufficient is the theory which attempts to account for animal heat by simple combustion.—(*Jour. de Phys.*, Oct., 1858; *fr. Zeitschrift für Rationellen. Med.*, vol. ii. part ii., 1858, p. 360.)

IV.—*On the Influence of Exercise over Respiration and Pulsation.* By EDWARD SMITH, M.D., etc.

The author has been engaged in a very elaborate examination of the points above mentioned, as well as in regard to the quantity of air inspired under varied circumstances. The instrument employed to measure the air inspired was a very small "dry gas meter," arranged to record 2,000,000 of cubic inches. To the exit pipe of the instrument was adapted a caoutchouc tube, ending in a naso-oral mouth-piece, and so arranged that the air of inspiration passed through the meter and was there recorded, while the expired air passed out through the side of the mouth-piece.

Having ascertained that when seated he inspired a little over 500 cubic inches per minute, he inquired into the change produced by passive and active movements. Thus rolling of the body, after Marshall Hall's plan, without self-exertion, increased the amount inspired 56 cubic inches per minute, and 73 cubic inches more when lying on the face. Swimming in water at 68° F., raised the inspired air to 2200 cubic inches per minute, the respiration to 23, and the pulse to 115. Bending the trunk forward when seated, decreased the inspired air 50 cubic inches per minute. This observation has many interesting hygienic bearings. The passive exercise of riding or driving increased the air inspired in proportion to the roughness of the movement, being largest in equitation and least in easy railway riding.

Active exercise largely increased the amount inspired. Walking raised the amount inspired, so that slow walking elevated it to 1000 cubic inches, and fast walking to 2000 or 2500 cubic inches per minute—the rate of speed remaining the same. The carriage of burdens greatly increased the demand for air.

It is unnecessary to follow the author through the whole of his interesting observations. It is sufficient to add, that the exercise of the treadmill, and of rapid running, gave the maximum numbers, and showed that it is possible that the quantity of air we breathe may be increased sevenfold during short periods. The remarks which follow are too extended for quotation, but will well repay full perusal. They consist in applications of the knowledge acquired by these researches to questions of hygiene, disease, and prison discipline.—(*Edinburgh Medical Journal*, January, 1859.)

V.—*Of Glucogenetic Material, regarded as a Condition of Development of certain Tissues in the Fœtus before the appearance of the Sugar-making Function in the Liver.* By CL. BERNARD, April 4, 1859.

In a recent paper—reported on *page* 533, May, 1859, of this journal—is a statement of the fact announced by M. Bernard, that the placenta in some animals, and the amnios in others, contain a glucogenous compound. Following up the subject, he sought to determine in what other fœtal organs or appendages it also existed, and in what position and form it was to be looked for in these localities.

1. Cutaneous surface.—The glucogenous matter is found infiltrating the tissue of the skin, and within its epithelial cells. When the surface of a young

fœtus is scraped the matter so removed consists of various histological elements abounding within and without in a granular matter, which the acidulated tincture of iodine colors wine-red. The glucogenous substance thus identified gradually disappears as development progresses.

2. The mucous membranes.—The epithelia of these surfaces and of the conduits of their glands also yield the same substance, while the tissue proper of the glands annexed to the intestinal canal is devoid of it altogether.

3. In the lung surfaces, it persisted to the period of birth; and it was also found, although not up to this epoch, in and on the mucous surfaces of the genito-urinary passages.

4. Interior tissues.—The granular glucogenous matter is never found in the nerves or bones of the fœtus. Very early in embryonic life it is also absent from the muscles, but a little later it appears in these, and remains a constant element of their bulk until after birth. The glands are entirely free from this ingredient, and it is absent even from the liver until the middle of fœtal life, when that organ assumes its usual glucogenic function, and the glucogenic matter begins to disappear from the other tissues of the economy.

M. Bernard thence concludes that glucogene fulfils an important function in the processes of fœtal development, while, in like manner, the glucogenetic function of the liver in post embryonic life is equally concerned in the phenomena of growth and nutrition.—(*Gazette Hebdom. de Med. et de Chirurgie*, vol. vi. No. 16.)

VI.—*Physiology of Secretion. Supposed Influence of one Nerve upon another.*

By CL. BERNARD.

It is scarcely necessary to state in full the views of M. Bernard in regard to the effect produced by exciting the two sets of nerves which enter the submaxillary gland, in order to make the following additional views comprehensible. When the filaments which emerge from the superior cervical ganglion were excited, the saliva ceased to flow from the gland, its venous blood became very dark, and its circulation was notably diminished. When, on the other hand, the chorda tympani-nerve was irritated, the local circulation became rapid, the emergent blood was red, and passed out in jets, and the secretion of saliva became suddenly active. These facts seemed to accord with the idea of an active dilatation in the vessels; but this view being unsatisfactory to M. Bernard, he sought further for an explanation of a less dubious nature.

Last March, he related to the Society of Biology certain facts which have afforded the foundation of an explanation, which he will seek to test still further by new and varied experiments.

1. When the main cervical cord of the sympathetic nerve is divided below the superior cervical ganglion, no effect is produced upon the circulation of the blood in the submaxillary gland. If, on the other hand, the section involves the nerve branches which pass from the ganglion to the gland, the local circulation becomes thereby increased in a greater or less degree, according as the section is made near to or remote from the gland. This acceleration of the circulation is due to such a paralysis of the vessels as occurs in the face, when

the cervical trunk of the sympathetic is divided. If the section of the sympathetic filaments of the submaxillary gland be made in the hilus of that body, the effects alluded to are most marked.

2. When a dog is poisoned with woorara, the above described phenomena—increased circulation, salivation, altered color of the blood—occurs at the moment when the nerves become paralyzed by the action of the poison.

3. Finally, it is possible to poison locally the submaxillary gland, by injecting a minute amount of woorara into its substance, when the same phenomena are observed.

It is thus rendered probable that paralysis of the sympathetic nerve and excitation of the chorda tympani produce like results as regards circulation, secretion, and color of the blood issuing from the submaxillary gland. We should thus be led, following M. Bernard, to consider the sympathetic as governing the vessels, contracting their calibre at times, and at others allowing them to dilate. To explain, however, the action of the chorda tympani upon the circulation of the salivary gland in question, M. Bernard announces the following very singular hypothesis. He supposes the chorda tympani-nerve to act not on the muscle of the vessels, but upon the minute filaments of the sympathetic nerve itself. Being excited, it acts on the sympathetic to cause abolition of its power to contract the size of the vessels. This would be, of course, one nerve acting upon another, the paralysis of one nerve by the excitation of another. It is not difficult to conceive of many possible applications of this view, if it can be shown to be tenable in the case now before us.—(*Gaz. Hebd.*, February, 1859, vol. vi. No. 6.)

VII.—*Effects of Ligature of the Œsophagus in Animals.* Report of M. Trousseau.

The question here proposed assumes a vast importance, from the fact that in a large number of the experiments upon the ingestion of poisons, made by Orfila and others, the œsophagus was tied to prevent the rejection of the substance employed. Until a recent period, no one seems to have suspected that the mere ligation of the œsophagus could give rise to formidable symptoms and to fatal results, which might be wrongly referred to poisons previously placed in the stomach. In June, 1856, MM. Bouley and Reynal sent to the Academy of Medicine a communication, in which they believed themselves to have demonstrated that ligature of the œsophagus was not the innocuous operation which Orfila believed it to be; that in most cases it was followed by grave symptoms, and that when permanently applied, it was inevitably fatal. The bearing of these statements is clearly this:—Orfila left on record a large number of experiments in which he had placed various substances in the stomachs of dogs, and then tied the œsophagus. If, now, the later observers are right, and this operation is alone competent to destroy life, nearly all of Orfila's experiments will demand a new and more rigorous scrutiny.

The paper of MM. Bouley and Reynal was referred to a commission, composed of MM. Begin, Bouley, Jobert, Larrey, Rénault, and Trousseau, the latter of whom acted as reporter. To the same commission were also referred additional communications on the same subject by M. Orfila, a nephew of the toxicologist, Follin, Sédillot, Colin, Szumowski, and Jobert.

After a patient, experimental criticism of the views of these several observers, the commission arrived at the following conclusions :—

1. Ligature of the œsophagus causes symptoms of a serious nature, which should not be neglected in toxicological studies.

2. These symptoms are more or less grave as the ligature is more or less rightly applied.

3. Permanent ligature of this canal causes death in nine-tenths of the cases.

4. The maximum duration of life, under these circumstances, having been six days, doubt is cast upon the supposed toxicological characters of substances tested by ingestion and subsequent ligature of the œsophagus, when death follows their administration only after the lapse of two, three, four, five, or six days, and with still more reason when it is yet longer delayed.

5. The symptoms which follow the permanent application of a ligature to the œsophagus, are profound prostration, supervening at the close of twenty-four hours.

6. The consecutive lesions are inflammation of the nerves which accompany the œsophagus, with or without purulent formations in the track of the wound, so that where these complications attend the administration of poisons retained in the stomach by ligature of the œsophagus, their supposed effects are to be regarded with suspicion, owing to the impossibility of referring the accidents in question to the supposed poison, or to the means used to retain it in the intestinal cavities.

7. The temporary ligature of the canal is fatal but in three of one hundred cases.

8. It is hence inferred that when the ligature is to be used, it should be applied without great pressure, and should be removed within six hours.

In commenting upon the report here analyzed, M. Brown-Séquard states that two experiments are needed to make the matter complete—First, to irritate the nerves of the œsophagus without obstructing that canal; and second, to tie it after cutting the said nerves. To try the first of these, he divided the canal longitudinally, and fixed in it a tube by the aid of two ligatures, so that deglutition and vomiting were still possible. The accidents observed by MM. Bouley and Reynal showed themselves in this case, but to a less extent than when the canal was tied without the use of a tube.

In the second experiment, the two recurrent nerves were divided and a ligature placed about the canal near to the thorax. In this case, the phenomena recorded by Bouley and Reynal failed to appear! The symptoms observed by these gentlemen were therefore due in all probability to reflex impressions affecting the buccal, pharyngeal, salivary, bronchial, and gastric secretions, and analogous to the flow of tears which follows irritation of the cornea.—(*Journal de Physiologie*, October, 1858.)

VIII.—*On the Amyloid Corpuscles as Normal Productions on the Surface of the Skin.* By M. L. LUYS.

In October, 1853, Virchow pointed out to the *Académie des Sciences* of Paris, the existence of a particular substance in the human body, giving rise to the same chemical reactions as vegetable cellulose. This discovery was confirmed by Carter, of Edinburgh, (1855 and 1858,) and the result of the researches of these two observers was, that amyloid corpuscles were found in nearly all histological tissues. Virchow considered this substance a degeneration, a pathological condition. Carter, on the contrary, believed it to be a normal production, connected with the regular exercise of physiological phenomena. It is interesting to compare these investigations with the discoveries made by M. Cl. Bernard in regard to the sugar-forming substance, and to trace thus an additional resemblance between the phenomena which take place in the animal economy, and those which are observed in the vegetable organism.

In a memoir read before the *Société de Biologie*, M. Luys has endeavored to prove—1. That the skin is endowed, in its physiological and pathological condition, as all other tissues of the organism, with the property of producing amyloid corpuscles. Carter pointed out their existence only in certain cases of ichthyosis, in the deep layers of the dermis, and consequently believed that their presence in these cases was owing to a morbid state. 2. That these corpuscles present the reactions of amyloid substances.

The amyloid corpuscles are obtained by scraping the surface of the moistened skin with the back of a scalpel. They are more abundant on the nape of the neck, and on the scalp, than anywhere else. The epithelial lamellæ, which the comb or brush removes, are literally covered with a great quantity of these very corpuscles. The author has convinced himself, by careful experiments, that they came neither from the dust suspended in the atmosphere, nor from the starched linen worn on the body. The fact that amyloid corpuscles exist on the surface of the skin of the fœtus, at the moment when it leaves the uterine cavity, can be considered decisive. The corpuscles derived from this source have served to establish the typical characters.

The amyloid corpuscles are numerous; their dimensions vary from the hundredth to the four hundredth of a millimètre; transparent, pale, of disk-like form, resembling that of a ship biscuit, depressed in the centre, and appearing, consequently, slightly biconcave; homogeneous, of even fracture, and containing no cavity.

M. Luys has found them to possess the following chemical characters, which have been confirmed by the researches of M. Berthelot:—

They are insoluble in cold water, ether, in absolute alcohol, either cold or on heating, in spirits of turpentine, and in ammonia. After having been subjected to contact with these substances, they are always susceptible of being colored by iodine. In a solution of potassa or soda they swell, and become paler. Iodine gives them instantaneously a dark violet, nearly black color; on addition of sulphuric acid, the color changes to a clear blue.

If corpuscles thus darkened by iodine, are heated in a little water, they become paler as the heat of the liquid increases, and disappear entirely on ebullition; when the temperature afterwards decreases again, they reappear gradually with their primitive color. If corpuscles colored by iodine are subjected to the action of dry heat, they assume a Sienna-red color.

Although this substance, in the very small proportions in which it was obtained from the skin of the fœtus, has not yet given rise, in the hands of M. Luys, to the characteristic reactions of starchy matter, the formation of sugar, the author believes himself, nevertheless, authorized in saying that it approaches and presents the greatest analogies with vegetable starch.

The mode of formation, and the use of this amyloid substance, have not yet been ascertained, and demands further researches.—(*Gazette Médicale*, 1859, No. 1.)

Bi-Monthly Periscope.

SURGERY.

1. Popliteal Aneurism Treated by Compression and Manipulation. Under the care of *Mr. Thomas P. Teale.*—Joseph M., aged forty-eight, a laborer, who had been discharged from the army five years ago, was admitted into the Leeds Infirmary, on October 26, 1858. Three months before admission he first observed a slight swelling of his left leg, which was soon followed by pain around the knee and along the calf. He attributed his ailment to a sprain received the day before while he was exhibiting to his companions a piece of military drill, consisting of arching the trunk forward and backward so as to touch the ground with his hands in both directions. Two or three days afterwards he discovered a small prominence, like a marble, in the ham, which has continued to increase until the present time. It is a remarkable fact that during the Crimean war Mr. Teale had at one time in the hospital three cases of popliteal aneurism, the subjects of them all being militia men. On the admission of M. into the Infirmary, an oval tumor, about the size of a small lemon, occupied the left ham, and exhibited the usual signs of aneurism.

October 26.—On this day at noon, treatment by pressure of the artery as it passes over the pubes was commenced by means of the fingers, several students having kindly undertaken the treatment in turns.

30th.—This treatment was continued during twelve hours of the day, and left off during the night, until the present date. The tumor has become a little smaller, and perhaps harder; but as the improvement is not greater than has been frequently derived from mechanical pressure, the gentlemen were released from their compressing duties, and pressure by the ring tourniquet at the upper and middle portions of the thigh was substituted for manual pressure. The patient was taught the course of the artery, and was directed to vary the seat of pressure from time to time as the part became painful. He was, morever, instructed to leave off the pressure at night, so as to secure sufficient rest.

November 2.—Size of tumor not much lessened, but its walls feel thicker;

pulsation is somewhat less, and is controlled by a slighter amount of pressure. At the outer side of the knee a branch of an artery can be felt pulsating.

5th.—Another enlarged anastomosing branch felt at the inner side of the knee.

9th.—Tumor slightly diminished in size, and more firm to the touch.

12th.—Not much change since the last report. Mr. Teale now made an attempt to disturb the fibrin within the sac by moderate manipulation.

14th.—No material change since the last report. Mr. Teale repeated the manipulation with much greater freedom, kneading the tumor in various directions. This was done at 1 p.m.

15th.—An hour and a half after the last manipulation, the tumor had entirely ceased to pulsate, and had become a solid mass.

26th.—The tumor having rapidly decreased in size, the patient left the hospital this day cured, having been able to walk about the ward for a few days.

Mr. Teale, addressing the students, made the following observations on this case: "You would observe, gentlemen, that on the seventeeth day of treatment, at which time the aneurism had been very slowly diminishing in size, and increasing in solidity, but still retaining a rather strong pulsation, I resorted to a new method of treatment, namely, manipulation of the tumor, in the hope of hastening the cure. For the introduction of this new element in the treatment of aneurism, we are indebted to Mr. Fergusson, who, in 1856, brought the subject under the consideration of the Medico-Chirurgical Society. This gentleman referred to cases in which 'spontaneous cure' was brought about apparently by the displacement of fibrin within the sac. He proposed to imitate nature in this respect, and by manipulation of the aneurism to displace portions of fibrin, which might obstruct the distal end of the aneurism, and might also, by the irregularity of surface, resulting from displaced masses of fibrin, afford new points for more speedy deposition, and the consequent consolidation of the aneurism. The treatment was adopted by Mr. Fergusson in two cases of right subclavian aneurism. Following his example, on November twelfth, I manipulated the aneurism by a kneading kind of pressure with the fingers. No particular result followed. On November fourteenth, at 1 p.m., I repeated the manipulation much more forcibly, and at 2·30 the same day, the tumor had become perfectly consolidated, and had ceased to pulsate. No further treatment was adopted. Absorption went on rapidly, and the patient left the hospital cured on November twenty-sixth, or thirty-one days after the beginning of treatment, and twelve days after the second manipulation. I think it is impossible, in this case, not to connect the sudden solidification of the tumor with the free manipulation practiced an hour and a half before. So strongly do I believe that the ultimate cure was owing to this proceeding, that I intend hereafter to put this mode of treatment, in cases of aneurism of the limbs, to the test of further trial. But, gentlemen, let me guard you against adopting this practice in aneurism of the carotids or of the innominate artery; or, in other words, in aneurism of arteries leading to the brain. In such cases you might run the risk of detaching small portions of fibrin, which, being carried along the current of blood to the brain, might then produce the serious mischief of that organ, and the consequent paralytic affections described by Dr. Kirkes in a paper of great value published in the *Medico-Chirurgical Transactions* for 1854. And this is not a mere speculative evil, as you will perceive from the following case which I will briefly notice, and which I regret has not been published in an extended form. In the year 1847, I was one of a numerous consultation on a doubtful case of carotid anuerism. The subject of it was a middle-aged female, in good health in other respects. She was seated in a chair while the tumor was examined by several persons in succession, and subjected by them to repeated handling and compression. While this was going on, she suddenly became pale and slipped off the chair. On being raised, she was found to be hemiplegic. After lingering in this state a few weeks she died. The tumor was found, after death, to be aneurismal. It was not, however, until I read the paper by Dr. Kirkes, that I fully appreciated the pathological bearings of this case. Now that we do understand it, let me urge upon you to bear it in your minds, and let it be a warning to you, in carrying out Mr. Fergusson's valuable suggestion, to limit the treatment by manipulation of the tumor to aneurism of the extremities. I may also add that, in one of the two cases of aneurism of the subclavian artery which are published by Mr. Fergusson, hemiplegia occurred very shortly after manipulation. It is not improbable that the aneurism in this case extended to the innominate artery. Mr. Fergusson alludes to the possibility of the hemiplegia being produced in the manner explained by Dr. Kirkes."—(*Medical Times and Gazette*, March 12, 1859.)

2. ON LABIAL CANCER. By *Professor Riberi.* (Omodei's Annali, vol. clxvi. p. 331.)—In a notice of the forthcoming third volume of Professor Riberi's "Lezioni Orali," an account is given of his experience with respect to labial cancer at the Turin Clinic. The *ages* of the 81 patients were as follows:—2 between twenty and thirty, 3 between thirty and forty, 11 between forty and fifty, 28 between fifty and sixty, 20 between sixty and seventy, and 17 between seventy and eighty. Of these, 69 belonged to the *peasantry* class, a predominance perhaps attributable to their unnutritious food, their abuse of peppers, garlic, vinegar, and the like condiments, their neglect of personal cleanliness, and their exposure to vicissitudes of the weather. Another predilection of the disease was for the *male* sex and the *lower* lip, inasmuch as only three of the cases occurred in women, and in only four instances was the upper lip affected, two of these occurring in men and two in women. In all but one patient the sanguineous temperament was manifested in a greater or less degree, showing the influence of the conditions of the blood-vessels and of the blood in this disease as compared with that of the nervous system. In seventy-six of the subjects the constitution was good, robust, or even athletic. This confirms the observation made by Pravaz, that the general belief is erroneous which supposes that lymphatic, delicate, cachectic constitutions, are most liable to cancer. Persons become cachectic and enfeebled as the disease advances, as its result, not as its cause.

In most of the patients an unhealthy state of the skin prevailed, and there were few cases in which some complication was not observed, arising from disturbances of the respiratory or circulatory organs, varix, varicose ulcers, chronic gastro-hepatitis, pellagra, etc. After awhile, the *glands* in the vicinity enlarge, and it is of importance to determine whether their increase be merely sympathetic or symptomatic of invasion of the disease. In the former case, a single gland only usually becomes enlarged, being of recent origin, round or oval in form, movable, and liable to spontaneous changes in size; it is painful and tender to the touch, the skin being warmer than usual, and in some cases slightly reddened. In symptomatic enlargement, two or more glands are almost always affected, large and indurated lymphatic cords stretching between them, and often down the side of the neck. After awhile, the glands may acquire a large size, assuming an irregular form, becoming more or less fixed at their base, being but slightly movable, and not undergoing spontaneous change in size.

Before proceeding to the operation, M. Riberi submits his patients to hygienic and medical treatment calculated to relieve any complication or subdue any inflammatory action that may be present. Some cases of cancroid would indeed be cured by such procedures had the patients sufficient patience to await the result. Believing the employment of caustics mischievous in almost all other forms of cancer, M. Riberi regards them as of great utility in epithelial cancer, especially of the face, when the base is small enough to admit of its entire destruction. But as the tissue of the lip is very soft and yielding, and cancer soon sends widely-spread roots into it, and as patients usually do not apply until the lesion has thus become extensive, the employment of caustics is not admissible. Moreover, considerable deformity may result from its application, and an aggravation of the disease may be produced when the whole has not been extirpated. The operation with the V incision, having its base toward the labial edge, and conjoined when necessary with cheiloplasty, is that to which Professor Riberi gives the decided preference. He enters into considerable details upon this part of the subject, for which we have not space. Whatever form of the operation be adopted, he insists upon the necessity of removing during its performance all glands that may be symptomatically affected.

Of seventy-eight persons operated upon, seventy-three left the clinic cured; some of these, however, returned at the end of more or less long periods suffering from other cancerous diseases, two succumbed to a reproduction of the disease while in the clinic, and three died after the operation from causes not connected with it. The following are the conclusions drawn from a consideration of the cases of the eighty-one patients:—1. The disease almost always commences as epithelial cancer or epithelioma of the skin or mucous surface of the lip, spreading thence to the parenchyma, and very rarely begins in this last, extending thence to the surfaces. 2. The skin is almost always primarily affected, and only in some rare instances by morbid diffusion from the mucous surface. 3. Although very frequently unaffected at first, the mucous membrane becomes almost always implicated in the course of the disease. 4. The cellular tissue of the parenchyma is always simultaneously affected, as are very frequently the mucous and sebaceous crypts, to the great number of which in the lips Benjamin Bell attributed the frequency of labial cancer. 5. The muscular tissue is sometimes unaffected, sometimes participates slightly in the disease, and in some cases is so involved as to become entirely destroyed. 6. Whatever our nosological distinctions may be in respect to the species of cancer, nature shows how ill founded they are, by exhibiting more than one of these together; but facial cancers are those in which this junction is seldomest observed.—(*British and Foreign Medico-Chirurgical Review*, April, 1859.)

PRACTICE OF MEDICINE.

THE MANAGEMENT OF THE SHOULDERS IN EXAMINATIONS OF THE CHEST. By *J. W. Corson, M.D.* From this interesting paper we extract the summary, as it embodies all the practical facts contained in it:—

1. That remembering the great value of many reputed "little things" in the science of saving life, and that the chests of *lean* persons give clearest sounds, and are best marked, we may seize this hint from nature, and increase the "physical signs," by either lessening or removing more especially those principal natural obstacles, the great pectorals in front, and the two scapulæ and their muscles behind.

2. This may be effected by using the arms as levers, and the hands as hooks to pull. The process, in each case, involves three principles—*thinning*, *condensing*, and *tightening*. It is illustrated by the simple experiment of placing one forearm of a muscular man behind his back, while the other hangs loosely by his side, when the sound, especially of percussion, will be found heightened below the clavicle of the stretched side in front.

3. That the suggestions here offered are not fanciful theories, but the results of practical observations on several hundred patients, in private and in two large dispensaries, during the past year. The drawings, too, were copied from nature. To throw back the shoulders, and bare the whole front, we need the "*first position.*" It is a repetition of the above experiment with *both* arms. *The left wrist is simply held easily with the right hand behind the loins.* This has many little advantages in obscure cases. It gives symmetry, gets rid of the arms, and fits the coat of flesh closely, like a bandage, for "inspection," makes it tense to increase the resonance of delicate percussion, and *conducts* better the sounds within. It thus aids in distinguishing the more difficult cases of tubercles, pleurisy, pneumonia, or aneurism.

4. That the "*second position*" is the common one of locking the hands over the head to examine the axillæ, and is mentioned to avoid omission. The "*third position*" crosses the arms at the back of the head, with the hands grasping near the elbows, so as to *hoist* the shoulder-blades high up behind, and *thin* the muscles, to search for obscure or limited pleurisy or pneumonia low down near the diaphragm posteriorly.

5. It is very important early, in suspicious cases of cough, to examine carefully the *tops of the lungs behind.* For without any distinct signs in front, consumption, often thus mistaken for a mere throat affection, begins here. A few scattered tubercles are apt to *burrow*, as it were, beneath the top of the shoulder. Here we need the "*fourth position.*" For this the patient crosses arms in front, slightly stooping, *hooks* the hands at the loins, or false ribs, and then stretching upward, he holds fast to increase the tension. The physician aids from behind, by pressing down firmly the shoulders. They are thus *slid off*, the muscles are smoothed down, and the ear, coming closer upon the top of the lung, hears better the sounds.

6. *As worth more than all the rest*, we commend the "*fifth position*," for by natural machinery it wrenches the shoulders forward *out of their beds*, and

widely severs them in the rear. In thin persons it often thus stretches out their intervening muscles till like stout broadcloth, and thus quite uncovers the inner and upper part of the lungs behind. To accomplish this, the patient crosses his arms in front, with the stronger outside, grasps with the opposite hands the *two shoulder-joints,* pulls both strongly, and holds fast, to keep them tense. The physician aids to fix the shoulder-blades widely apart at the back by firmly pushing. Even in health, as any one can prove, the soft breathing murmur at the former place of the scapula can be thus nearly doubled. In tubercles it here opens a new field for *palpation,* and especially for *percussion.* It intensifies harsh respiration, or "fatty crackling." In pneumonia, it exaggerates the clear, barrel-like echo of "bronchophony," and in pleurisy, that line between wind and water, the trembling "egophony." It brings out a delicate *new sign,* we have discovered, in bronchitis. It is a kind of prolonged liquid breathing, as if through a layer of wet sponge, heard before or after mucous râles, which we venture to name *moist respiration.*

7. Another new and really useful "physical sign" we have to communicate, is *the comparative stiffness of the shoulder over the lung most diseased, in strong breathing, seen and felt from behind.* For this we may use the "*sixth position.*" Facing the back of patient, a yard distant, near a window or white wall, you tell him to drop his arms, let them hang easily by the sides, "as if dead," and then breathe deeply for a few moments, "like a man a little out of breath." You now "take aim," like a rifleman, across the tops of the shoulders, and then shut your eyes and *feel* them gently swell. Drawing nearer, you notice that the "inferior angles" of the scapulæ move gently in breathing, like the fins of a fish. You can both *see* and *feel* this movement. This *stiffness* of the shoulder in breathing may be decided or slight, local or general. When most at the top, we term it, for convenience, "acromial," and when most at the lower extremity, or inferior angle, we call it "angular." Curiously enough, these last features seem to depend on the higher or lower location of the disease, which thus, as it were, *paralyzes the parts nearest.* An elegant way of testing "angular stiffness," even in a lady fully clad, is to place your two index fingers on the lower points of her shoulder-blades, and watch and feel their movement as she sighs. The causes of this stiffness are supposed to be *loss of upward expansion* in the lung, tenderness, pleuritic adhesions, and weight of morbid deposits. A table of eighteen cases is added, illustrative of this sign. It was least in recent attacks; varied most in phthisis; was slightest in pneumonia, and greatest in chronic pleurisy.

8. A statement of measurements of ten males shows the gain in inches and decimals, by "third," "fourth," or "fifth" positions respectively, between the inferior angles of the scapulæ and the lowest lumbar vertebra, the "superior angles" and the vertebra prominens of the neck, and between the two upper and two lower angles of the scapulæ. Of the whole of the six positions, the first, fourth, *fifth,* and sixth, are the most frequently useful. The others apply to particular cases. Taking into account the pulmonary complications of other diseases, as well as the range of "chest disease," it is believed these various improvements, slight as they seem in detail, really throw light, perhaps, upon many forms of *one-third of the fatal maladies of the race.*

9. On account of its fearful importance, it is hoped they will mainly benefit *tubercular consumption.* Tracing faithfully, by various "marks" and the unhealthy habits of the patient, the agencies leading to the two prevailing causes, *feeble organization,* and *depraved nutrition*—by prompt reform of abuses, generous *animal food,* and free exercise in the *open air,* with tonics, and *cod-liver oil*—we may do much to arrest the disease. *Occasionally we may cure.* The encouraging researches of Hughes Bennett and Messrs. Rogée and Boudet, show, that from the numerous chalky concretions, puckerings, and cicatrices, found at the tops of the lungs in very aged persons, it is probable that *about one-half have recovered* from more or less tubercular deposits during their lives. Four living cases from several others are reported by the writer, of arrest or cure of phthisis of several years' standing. The great question of this paper then is, *What may be the result of average notice, say three months sooner?* Time only can tell. Each physician who reads this is earnestly requested to aid by a faithful trial of this system of examinations in at least *three suitable cases.* The malady is still widely and deplorably fatal. From extensive trial, we firmly believe that, simple as they may seem, this *management of the shoulders,* these expedients for *thinning, condensing,* and *tightening the fleshy walls of the chest, add fully one-third to our power of detecting the earliest signs of consumption.*—(*New York Journal of Medicine,* March, 1859, p. 185.)

OBSTETRICS.

1. ON COMPRESSION OF THE AORTA IN UTERINE HEMORRHAGE. By *Dr. Spiegelberg.*—M. Seutin, of Brussels, in a communication made to the Berlin Obstetrical Society, proposed what he termed a new method of arresting uterine hemorrhage, viz., the compression of the aorta, a procedure which he described as both easy of execution and certain of success. Of course, in a society of obstetricians, the pretension to novelty was soon disposed of, and the communication only calls for notice as having induced Dr. Spiegelberg to make some remarks condemnatory of the practice. That compression of the aorta will arrest uterine bleeding, he has convinced himself by many experiments; but the explanation of this is not due to the fact that all blood is thus prevented entering the uterus. The instant we divide the arteries conveying blood to the uterus, its muscular fibres contract, and the organ becomes diminished in size. Every one knows that such contraction will arrest hemorrhage. Dr. Spiegelberg has several times observed these remarkable results in both pregnant and non-pregnant animals; and has found the same consequence follow compression or ligature of the aorta, when it has passed the diaphragm. If, therefore, compression of the aorta thus excites powerful contraction of the uterus, it should evidently be an appropriate means for arresting hemorrhage, but the author's experiments show that for such compression to be of use, it must be permanent, the uterus distending again, as soon as the calibre of the artery becomes unobstructed. But on a living woman, compression could not be kept up continuously long enough to secure permanent contraction. Moreover, the aorta cannot be so

completely compressed through the abdominal parietes, even immediately after delivery, as it can in animals when the cavity is laid open. So that, however surely we may seem to exert compression, some blood will always gain admission. Again, the closure of the aorta cannot be effected in woman as in animals, just below the diaphragm, but only after the large vessels of the intestines, and the renal and spermatic arteries have been given off; from which vessels the organ may obtain an abundant supply of blood. Lastly, the compression employed will also close the vena cava inferior; and the speaker's experiments and observations have convinced him that in such a case contraction of the uterus will not take place—the organ remaining then gorged with blood and relaxed. Indeed, it would *a priori* be expected that if the return of blood from the organ be obstructed, the vessels would become distended, and the open state of their orifices after birth would allow of the escape of their contents. This explains the cases in which R. Lee and Schneemann have observed the hemorrhage *increased* after compression of the aorta. Dr. Spiegelberg, therefore, regards the practice as destitute of a physiological basis, and of no practical utility; and he agrees with Dr. Schneemann, in considering the cases which have been seemingly benefited by it, to be really examples of excitement of contraction induced by the friction of the uterus made during the attempts at compression of the aorta.—(*Monatsschrift für Gebartskunde,* Band xi. p. 26. *Medical Times and Gazette,* January 29, 1859.)

Editors' Table.

American Medical Association. *Twelfth Annual Meeting.*—Actively instrumental as we were in its foundation, and in giving it form and proportions, when some, whose names are now inscribed on its entablature, held back in doubt bordering on utter disbelief, if not ridicule, of the feasibility of the results hoped for in its inception, we cannot but take a lively interest in all that relates to our great national association of medical men. The recent meeting of this body at Louisville furnishes matter for grave reflection, not so much as relates to what it either has done or failed to do on that occasion, as to its inherent strength and capability to realize the anticipations of its friends. Will it prove itself to be the citadel for the preservation and protection of the great principles of ethics and the fundamental doctrines of medical science, at once a barrier against lawless innovations, and a nursery for the dissemination of new truths? A national medical association is as much a necessity for the body medical of the United States, as a central government is for the body politic of these States, as is, in fact, a sun to be the centre of the planetary and sidereal system. We regard the annual conventions of delegates from the corporate and other medical bodies of the Union as a great step; but it is still only a step, and falls short of meeting the wants and requirements of the profession. These objects can only be fully attained by a permanent body entrusted to carry into effect the decrees of the convention—a body unceasingly vigilant and active in the discharge of the duties devolved in it, and which, even if it should not be endowed with compulsory power, would at least prevent the parties invested with temporary functions, or who have promised consociation, from preferring the plea of forgetfulness or standing upon their dignity, or what they may choose to call reserved rights, but which are only special privileges now obsolete, and no longer compatible with progress and improvement.

A session of three days is quite too short to allow of anything like deliberate discussion of the many important subjects which are brought before the Association. Of these it can do little more than to take the initiative, by receiving propositions in the form of resolutions from its members, and by appointing committees for inquiring into and investigating the matters thus introduced to its notice. Time is not allowed for discussing the hearing and point of any of these matters, so as to ascertain whether a decision could be reached at once, and a vote taken, or a reference be made to a committee. The latter, on its appointment, has no means of learning the sentiments of the Association, or of gleaning useful facts often elicited during a preliminary discussion. In legislative bodies it is customary for the member who either introduces resolutions, or who invokes the appointment of a committee, to place before the house the general merits of the question, and to exhibit the grounds on which he asks for further action, and ultimate decision respecting it. In the Association, a member is afraid to open the subject in this way, knowing that he runs the risk of being prevented from doing it or himself common justice by the ten minutes rule, and probably by a motion of some other impatient member to refer the matter to a committee. Sometimes the reference is proposed in order to stop further discussion, and to procrastinate a decision on a subject which clashes with the prejudices, or the interests of a particular set. In this way a question of the last importance, such, for example, as medical education, may be put off from year to year, with the additional plea of some new light being cast on its merits, or a compromise being effected by the instrumentality of a committee. When, after the expiration of a year, if the committee brings in a report, a not very common thing, by the way, and it is a very long one, the Association has not time to hear it read, and it is referred to the Committee of Publication; so that, in fact, the matter thus passed on, is not a product of the collective wisdom of the great body from which it is supposed to emanate. The paper may be a work of labor and learning, and meet the requirements of the case, or it may be a sophomore essay, which would be reluctantly received in a medical journal the most needy for something to fill its pages. The Association, even if furnished with an abstract of the paper, has not given itself the opportunity of knowing its real character, and the Committee of Publication cannot exercise any critical authority beyond hinting to the writer some gross solecisms in logic or science, which he may or may not receive in a kindly and proper manner.

We are gratified to see that an amendment of this loose working of the Association will be effected for the future, by its having adopted the recommendation of the committee of which Dr. J. B. Lindsly was chairman, viz.: To divide the main body into sections; each section is to take cognizance of a branch of scientific and practical medicine, and after their reading, to discuss the merits of the papers, relating to this branch, which are brought before the Association. The manner in which these sections are to be formed does not appear in the published accounts of the proceedings. If they are large, they will, like all large bodies, be unwieldy and inefficient. In selecting or appointing them, special reference ought to be had to the known capability of the members, and to their being working men.

The American Medical Association met at Mozart Hall, in the City of Louisville, Kentucky, May 3d, 1859. The President, Dr. Harvey Lindsly, called the members to order at eleven o'clock A.M. The Association was welcomed by Dr. R. J. Breckenridge, chairman of the Committee of Arrangements, and by Dr. J. B. Flint, on the part of the Medical Society of Kentucky. The most noticeable resolutions, in the business of the morning, were those directing that every paper, intended for publication in the Transactions, must not only be placed in the hands of the Committee of Publication by the first of June, but must, also, be so prepared as to require no material alteration or addition at the hands of the author. The necessity for a resolution of this kind leads us to infer that great and unwarrantable liberty must have been taken with the Association by the authors of papers, in their presenting them in a crude and unfinished shape, in place of their being carefully prepared and elaborated. It was never intended to make the Association—national as it is in its composition and objects—a school for literary gymnastics, in which untried fledglings should spread their wings for the first time. As, in a measure, a corollary of the first resolution, a second directs that authors of papers shall return their proofs within two weeks after their reception, otherwise they will not be inserted in the volume of Transactions.

The retiring of the President of the former year from the chair was followed by the induction of the President elect, Henry Miller, M.D., of Kentucky. A most discouraging, but at the same time, instructive commentary on the extreme readiness to appoint special committees, without reference to the general attainments and actual readiness of the members who are designated to fill them, was furnished in the fact, that no fewer than twenty-one special committees of last year were unprepared to report at this meeting, and were continued to the next year. Nine of these are announced as being continued or altered—the subjects, as we infer, being the same as before—the composition of some of the committee undergoing a change. Of the standing committees, those on Medical Education and Medical Literature were not prepared to report. In such a state of things, the chairman of the Committee on Nominations, Dr. D. M. Reese, might well call attention to the necessity of some radical change in the mode of appointing committees to prepare treatises on scientific subjects, to be reported at the annual meetings. "It had been seen that on yesterday a large majority of the committees made no reports, and did not even see proper to send in any communication explanatory of delay. The difficulty heretofore has originated in the mode of selection adopted by the Nominating Committee. It has been customary for gentlemen to hand in their names and the proposed subjects on slips of paper, and the committee, without further investigation, have so published in the annual reports. Thus it has happened that appointments have been most injudiciously made, and gentlemen to whom a special duty has been assigned have been found to know less of that than of any other subject. It was therefore hoped that no committee of last year would be reappointed or continued, from which no report had been had and no communication received."

The Association, roused to a sense of an evil which it had always tolerated on previous years, although its patience was never tried to the same extent as now, resolved, unanimously, to instruct the Nominating Committee to act upon the suggestions of the chairman. The latter also stated that there should be some definite expression of disapprobation as to the course of those gentlemen who had volunteered essays, and had their names reported in the newspapers and spread over the land, and then paid no attention to the matter.

After the decided opinion of the chairman of the Nominating Committee, that no committee of last year would be reappointed or continued, from which no report had been had and no communication received, we are surprised to see that, with we believe two or three exceptions, all the delinquent committees have been continued; so much easier is it to discover the mortified part than to apply the cautery. Have greater caution and discrimination been exercised at the late meeting in the appointment of new special committees? No fears can well be entertained of the newly-organized Committee on Medical Education being delinquent next year, as we find that its chairman was at the head of the Nominating Committee, and made the energetic protest against its previous misdoings.

As if the Fates had determined that the volume of Transactions this year should be of the most gracile form, the Committee on Prize Essays could not discover, in any of the four essays presented to it, in time for a careful and thorough examination, the degree and species of merit which should entitle its author to the prize of the Association. Two quite voluminous essays were sent two days only before the meeting, and were very properly excluded from the competition of the present year. The committee asks the Association to determine, in a more precise and formal manner than has yet been done, the terms and conditions of competition and of success in the contest for prizes, for the government alike of contestants and the committee of adjudication.

In order to facilitate, for the future, the dispatch of business, Dr. Harvey Lindsly moved that a select committee of three members be appointed to prepare a system of rules for the government of the Association, the same to be as few in number and as concise and perspicuous as possible, to be reported at the next annual meeting.

Ethical questions of some moment were brought up for consideration and action. Foremost among these was the adoption of an amendment of the constitution, presented last year. It is, that no individual who shall be under sentence of expulsion or suspension from any state or local medical society, of which he may have been a member, shall be received as a delegate to the Association, or be allowed any of the privileges of a member, until he shall have been relieved from the said sentence by such state or local society. Another amendment was also adopted, viz.: No one expelled from this Association shall at any time thereafter be received as a delegate or member except by a three-fourths vote of the members present at the meeting to which he is sent, or at which he is proposed. The Committee on Medical Ethics reported on the complaint made by two medical societies of New Jersey, to the effect that the "New York Medical College" conferred the degree of Doctor of Medicine upon a notorious quack of the name of John F. Dunker, of Newark. The Faculty, through the President of said College, pleaded guilty to the charge, but put in a plea for mitigation of censure, by alleging that they were grossly deceived by false testimonials furnished by said Dunker, and that they have revoked and annulled his diploma, and declared him to be unworthy of patronage or support from authority conferred upon him by this diploma. The committee notices the memorial of the Newark (N. J.) Medical Association as entitled to serious attention, from its showing the negligent manner in which mere verbal and hearsay statements are at times accepted, in place of authentic written testimonials, from individuals presenting themselves as candidates for the honors of the profession at some of the medical colleges of this country. Another matter was referred to the committee, touching a charge preferred by the Dubuque Medical Society of Iowa, against one of its members, which did not call for action, as the difficulty had been adjusted in the State in which the parties reside. In looking at these things, one must feel encouraged at the position occupied by the Association, as a high court of appeal, to which the members of the profession in all parts of this vast country look for the support of their rights and the rebuke of those who infringe the laws of medical ethics.

The following are the committees which made reports on the subjects with which they were charged, viz.:—On Medical Ethics, by John Watson, M.D., of New York; on Governmental Meteorological Reports, by Dr. R. H. Coolidge, U. S. Army; on Criminal Abortion, by Dr. Storer, of Boston; on the propriety of dividing the Association into sections, by Dr. J. B. Lindsly; on Medical Topography and Epidemics, by Dr. Thomas Logan, of California.

The Association, in view of the prevalence and increasing frequency of the crime of procuring abortion, deem it its duty to enter an earnest and solemn protest against such unwarrantable destruction of human life. The subject is presented by the Association to the attention of the several legislative assemblies of the Union, with the prayer that the laws by which the crime of procuring abortion is attempted to be controlled may be revived, and such other measures taken as in their wisdom may seem good. The zealous co-operation of the various State Medical Societies is also invoked, so as to bring the subject before the legislatures of their respective States.

Among the Voluntary Essays was a voluminous one on some of the Changes of the Solids and Fluids in Malarial Fever, by Professor Jones, of Georgia.

Five committees reported, and twenty-one failed to report—a disproportion certainly not complimentary to the Association, nor indicative of any great working ability on the part of its members. We have repeated, after the chairman of the Committee of Nominations, some of the reasons for this lamentable deficiency. Others might be assigned. One which underlies the others has yet to be mentioned; it is the mistaken view of the character of the papers to be laid before the Association. These ought to be original as to the subject, or at least to be fresh contributions on some one or other of the different departments of medical science, illustrated, it may be, by reference to facts and discoveries of a kindred and collateral nature. But long and elaborate treatises on familiar themes, and embracing almost of necessity a good deal of commonplace, are not wanted. The members of the Association turn to volumes on their shelves for information of this kind, and do not feel at all disposed to listen to at the time, or to read afterwards, elementary propositions and descriptions with which it ought to be taken for granted they are familiar. A fanciful notion of the function of an organ is no adequate excuse for introducing a chapter from a received and current work on physiology; and so we would say of pathology and therapeutics. One cannot marvel that the member who is alone on the committee on so vast a subject as the following, should ask for another year to labor at his theme, nor ought we to complain if, with creditable consciousness of the difficulty of his task, he should beg for a still longer period of delay. His subject, as we read it in the published list of the several committees, is—"On the Hygienic Relations of Air, Food, and Water; the Natural and Artificial Causes of their Impurity, and the best methods by which they can be made most effectually to contribute to the Public Health." Here is a full title for a large and comprehensive treatise on hygiene, for the successful execution of which no little preparation, much reading and research, and a fair share of experimental observation are required on the part of the author, who, after he shall have acquitted himself creditably of his task, should offer his work, not to the Association, but to a publisher. Each one of the three great agents of hygiene—air, food, and water—would require the labors of a learned and experienced committee to bring it out in such a shape as should adapt it to the wants and expectations of the Association, for the improvement of the public health. The first part of the subject of the promised report of the committee, or that on the hygienic relations of air, food, and water, has been fully presented in existing works on hygiene. The second, on the natural and artificial causes of the impurity of these three great agents, unless handled with great dexterity, will lead the committee into disquisitions on geology, soil, and meteorology, in relation to the natural causes of the impurity of grains and fruits, and of physiology and rural economy as regards the impurity in animal flesh used for food. The last part of the subject-matter proposed to be examined is alone of sufficient magnitude to task all the knowledge, experience, and perspicuity of the gentleman who, of himself, makes up the committee. It is that also on which the applied science of the day may be brought to bear usefully for the improvement of the public health; and it is the only one that ought to occupy the time and attention of the Association.

We may be rash in our opinion, but it strikes us that if the two gentlemen who constitute the committee on "the Pons Varolii, Medulla Oblongata and Spinal Marrow, their Pathology and Therapeutics," had given the subject even a cursory examination, they would either have shrank from the task devolved on or volunteered by them, we know not which, or have insisted on being associated with the ablest physiologists and pathologists and clinical teachers of the United States; and we do not hesitate to say, that the Association was wanting in its duty in not referring this matter to a committee thus composed. A thorough examination of the subject would task the powers of a Bell, a Rolando, a Lallemand, a Foville, a Flourens, a Hall, a Brown-Séquard, and a Bernard, in its rare and varied anatomico-physiological relations, and of an Abercrombie, an Andral, a Schoenlein, a Romberg, etc. etc. in its pathological and therapeutical bearings. It involves a discussion and solution of some of the most difficult problems in medical science, and it ought not to be approached, for the purposes of a committee report, except by those who have gone fully and faithfully over the whole ground, and who are prepared, while giving us, in brief terms, the conclusions which have been reached by the master-minds who have investigated the subject, to present, at the same time, if not discoveries of their own, at least some pregnant suggestions which may advance us in future inquiries. We write in ignorance of the special qualifications of the two gentlemen who compose the committee on this vast subject. It may be, and we should rejoice to learn, that they have given years to its full and critical study, that they have accumulated from their own observations a large store of pathological changes, and of experiments bearing on the several points included in it, and that they have enjoyed many and rare opportunities for clinical experience by which they have been enabled to note the connection between symptoms and organic lesions and the influence of remedies on both. We might indulge in the same strain of comment on the appointments of some other committees which consist, each, of only one member, and he, we fear, not an "expert," while the subjects to be reported on presuppose prior experience in the mode of investigation and a consequent ability to experiment without being misled by the fallacies which had baffled his predecessors in the same line of inquiry.

A committee, consisting of Dr. J. B. Flint, who had introduced a preamble and resolution on the subjct, and Drs. Bowditch and Shattuck, was appointed to consider in what manner the profession in this country can best participate with their brethren in Great Britain in erecting a monument to the memory of John Hunter. We hope that the projected measure will be as eminently successful in its object as have been the labors of that great and original genius in the advancement of physiology, surgery, comparative anatomy, and simplified pathology, especially in what relates to inflammation and wounds.

As might have been expected, the citizens of Louisville were profuse in their acts of hospitality to the members of the Association, which did, with great sincerity, return its thanks on the occasion. A similar return was made the Committee of Arrangements and the profession of Louisville for their kind and assiduous attention and their hearty welcome.

The Association adjourned to meet at New Haven on the first Tuesday in June, 1860.

We must postpone, for the present, our notice of a meeting recorded under the grandiose heading of "Convention of the Professors of the Medical Colleges of the United States," held at Louisville, on the day preceding that of the Association. Two only of the Eastern schools were represented, viz. Dartmouth College and the Medical Department of Harvard University. Those of New York, Philadelphia, and Baltimore, did not send delegates. The University of Nashville also kept aloof.

The proposals to establish a Board of Censors, in every judicial district of the Supreme Court, who should examine and grant diplomas to all proper members of the Association; also to authorize the Committee on Conference to confer with the State Medical Societies on the subject of preliminary education; and for each State Medical Society to appoint, annually, two delegates to attend the examinations of all candidates for graduation, in participation with and by consent of the colleges, will be noticed more particularly in connection with the Teachers' Convention.

QUARANTINE AND SANITARY CONVENTION.—This body held its third session in the City of New York, on the twenty-seventh of April, and the three following days. Dr. John H. Griscom, of New York, was elected President. The most remarkable feature in its proceedings was the vote, reached after considerable debate, declaring that, "in the absence of any evidence establishing the conclusion that yellow fever has ever been conveyed by one person to another, it is the opinion of this Convention that the personal quarantine of cases of yellow fever may be safely abolished, provided that femites of every kind be rigidly restricted." The resolution was carried by a vote of seventy yeas to four nays.

Of the reports of committees submitted to the Convention we shall be better prepared to speak when they are published in connection with an official account of the proceedings of the four days' meeting. The subjects embraced in them are of too important a character to be dismissed with a brief notice; and they will require from our hands a thorough analysis, even though they may not call for searching criticism. The labor this year has devolved chiefly on the medical delegates from Philadelphia. The greater part of the Report on Quarantine was written by Dr. Jewell, chairman of the committee, with the aid of Drs. La Roche and Condie. It consisted of five heads, viz.: the history of quarantine: have quarantines secured the object for which they were originally intended? If not, the reasons of their failure: what reforms are required to make quarantines more efficient and less burdensome: Is a uniform system of quarantine laws feasible? If so, to propose a plan by which the object may be accomplished: A consideration of the best means for purifying an infected vessel. The fourth question is discussed by Dr. Wragg; the fifth had been referred to Dr. Cleveland, but was not reported on. The other four members of the committee were Drs. John W. Moriarty, of Boston, Warner Cleveland, of Brooklyn, W. J. Wragg, of Charleston, S. C., and Wm. M. Kemp, of Baltimore. The Committee on Internal Hygiene, appointed by the Convention in Baltimore last year, was required to report under six different heads; each to be prepared by a member of the committee. The Report actually written and sent on to New York embraced four of these heads, viz.: 1. Upon the subject of disinfectants, their character, effects, and benefits, in connection with sanitary measures; by Dr. Van Bibber, of Baltimore. 2. Upon the importance of an ample supply of water, an adequate sewerage, and the proper disposal of the offal of cities; by Dr. J. H. Griscom, of New York. 3. Upon the importance and economy of sanitary measures to cities; by Dr. John Bell, of Philadelphia. 4. A draft of a sanitary code for cities; by Dr. Henry G. Clark, of Boston.

The reports were printed, by authority, before being presented to the Convention, and hence we can speak of their volume. The one on Quarantine takes up eighty-four pages octavo; that on the Internal Hygiene of Cities, introduced by a brief statement from the chairman, Dr. Miller, of Washington City, a hundred and ninety pages, of which Dr. Bell's report occupies a hundred and eighteen pages,* Dr. Van Bibber's thirty-eight, Dr. Griscom's five, and Dr. Clark's twenty-four pages. Dr. Griscom had not time to give more than a slight sketch of his subject, and hence Dr. Bell was left to occupy so much of the ground. The two subjects not reported on are, a Regisgistration of Births, Marriages, and Deaths, assigned to Dr. Snow, of Providence; and on Vaccination as a Preventive of Variola, and on the value of Revaccination, assigned to Dr. Arnold, of Savannah.

New York, ever ready and liberal in her hospitalities, gave a dinner, complete in all the appliances of good cheer, to the members of the Quarantine and Sanitary Convention. The place of meeting next year will be at Boston, June 14th, 1860.

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* If we are correctly informed, large additions will be made to this report by its author, in its passage through the press under the superintendence of the Publishing Committee, in New York.

PROFESSORIAL CHANGES.—The Faculty of the Pennsylvania Medical College, since the retirement of Dr. Stillé from the school, have resigned their professorships in a body, and have been succeeded by the appointment of the entire Faculty of the Philadelphia Medical College. This amalgamation has had the effect of making one school less in this city.

In the New York Medical College, Dr. Barker has resigned the Chair of Obstetrics, and Dr. Childs that of Anatomy. Their successors have not yet been appointed.

Dr. G. T. Elliot, Jr., has been made adjunct Professor of Obstetrics, and Dr. P. M. Markoe, adjunct Professor of Surgery, in the College of Physicians and Surgeons, of New York.

In the Savannah Medical College, Dr. W. R. Waring has been appointed to the Chair of Anatomy, made vacant by the resignation of Dr. Howard.

Dr. L. P. Yandell, who was connected with the University of Louisville since its foundation, has retired from the institution. We understand that Dr. David W. Yandell has been appointed to fill the vacancy.

Professor Wood has announced his intention of resigning the Chair of the Theory and Practice of Medicine in the University of Pennsylvania, at the close of the next session. Dr. Wood has filled this position with distinguished ability for a number of years, and his retirement from active professional life will prove a loss not only to the institution with which his name is so honorably connected, but to the profession throughout the whole country.

MEDICAL CONVENTION FOR REVISING THE PHARMACOPŒIA OF THE UNITED STATES.—The Medical Convention for revising the Pharmacopœia, which met at Washington, in May, 1850, provided for assembling a convention for the same purpose, in the year 1860, by the following resolutions:—

> "1. The President of this Convention shall, on the first day of May, 1859, issue a notice requesting the several incorporated State Medical Societies, the incorporated Medical Colleges, the incorporated Colleges of Physicians and Surgeons, and the incorporated Colleges of Pharmacy, throughout the United States, to elect a number of delegates, not exceeding three, to attend a general convention, to be held at Washington, on the first Wednesday in May, 1860.
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> "2. The several incorporated bodies thus addressed shall also be requested by the President to submit the Pharmacopœia to a careful revision, and to transmit the result of their labors, through their delegates, or through any other channel, to the next Convention.
>
> "3. The several medical and pharmaceutical bodies shall be further requested to transmit to the President of this Convention the names and residences of their respective delegates as soon as they shall have been appointed, a list of whom shall be published, under his authority, for the information of the medical public, in the newspapers and medical journals, in the month of March, 1860."

In accordance with the above resolutions, the undersigned hereby requests the several bodies mentioned to appoint delegates, not exceeding three in number, to represent them in a convention for revising the Pharmacopœia of the United States, to meet on the first Wednesday in May, 1860; and would also call the attention of these bodies to the second and third resolutions, and request compliance with the suggestions therein contained.

GEO. B. WOOD,
President of the Convention of 1850.

PHILADELPHIA, May 1, 1859.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.—The eleventh annual meeting of this body was held in the Hall of the University of Pennsylvania, on the eighth of June, Dr. Smith Cunningham, President, in the chair. The delegates, nearly one hundred in number, were welcomed by Dr. Jewell, who made some appropriate remarks on the occasion The annual address was delivered by the retiring president, its subject being the period of Utero-Gestation. Reports were read from the York County and the Philadelphia County Medical Societies, and referred to the Committee of Publication.

On Thursday, Dr. Coates offered resolutions expressive of the regret felt by the Society in the death of Dr. Janney, of this city, and by the medical profession of the State in that of Baron Humboldt. These resolutions were adopted.

Reports of the Beaver, Bradford, and Mercer County Medical Societies were read, and referred to the Committee of Publication

Dr. Worthington, of West Chester, as chairman of a committee appointed on the previous day, read a report, which was adopted without discussion, that it shall be considered as improper for any member of the Society to meet female doctors in consultation.

The following gentlemen were elected officers for the ensuing year:—*President*, Dr. D. Francis Condie, of Philadelphia. *Vice-Presidents*, Dr T. C. Bliss, of Bradford; Dr. John L. Schrack, of Montgomery; Dr. B. F. Schenck, of Lebanon; and Dr. Edw. Wallace, of Berks County. *Corresponding Secretary*, Dr. James Carson, of Philadelphia. *Recording Secretaries*, Drs. John R. Kaul, of Lancaster, and John T. Carpenter, of Schuylkill County. *Treasurer*, Dr. R. P. Thomas. The Censors and Committee of Publication having been appointed, Dr. Cunningham thanked the members for their kindness toward him during his term of office. Drs. Jewell and Worthington then led Dr. Condie, the President elect, to the chair, who made a brief and eloquent address.

The Society adjourned to meet in the City of Philadelphia, on the second Wednesday of June, 1860.

During the session of the Society private evening entertainments were given by several medical gentlemen; and the day after the adjournment of the meeting the delegates took an excursion to Atlantic City, free seats being furnished by the President and Directors of the Camden and Atlantic Railroad Company. An elegant dinner at the Surf House, furnished by the Physicians of Philadelphia, and attended, by special invitation, by the Governor of New Jersey, Dr. Newell, himself a distinguished and zealous practitioner, concluded the festivities of an occasion that will long be remembered for its harmony and social feeling.

HOSPITAL APPOINTMENTS.—The vacancy occasioned in the Pennsylvania Hospital by the resignation of Professor Wood, has been filled by the appointment of Dr. Francis G. Smith, a step which has given universal satisfaction.

The governors of the Bellevue Hospital, of New York, have added to the medical and surgical staff of this charity, Drs. A. B. Mott, W. H. Church, J. W. S. Gouley, and C. H. Meir, as Surgeons; and Drs. A. C. Loomis, and T. W. Greene, as Physicians.

Dr. J. B. Biddle has resigned the post of Attending Physician to the Episcopal Hospital of this city, and is succeeded by Dr. Henry Hartshorne.

CHANGES IN MEDICAL JOURNALS.—Drs. Davis and Byford have ceased their connection with the editorship of the *Chicago Medical Journal*, and Dr. Brainard has become their successor.

On account of the removal to New York of Dr. Austin Flint, Jr., the editor of the *Buffalo Medical Journal*, this periodical has been issued under the title of the "*New York Monthly Review of Medical and Surgical Science, and Buffalo Medical Journal.*" It will appear simultaneously in both cities.

The following journals have ceased to exist:—The *Philadelphia Medical and Surgical Journal*, the *Louisville Medical Gazette*, and the *Montreal Medical Chronicle.*

NAVY MEDICAL APPOINTMENTS.—The Naval Medical Board of Examiners, consisting of Surgeons W. S. W. Ruschenberger, L. B. Hunter, T. D. Miller, and Passed Assistant Surgeon G. H. Howell, adjourned in this city, on the twenty-third of May, having recommended the following gentlemen for admission to the post of Assistant Surgeons in the Navy:—1. William Bradley, of Pennsylvania; 2. Edw. F. Corson, of Pennsylvania; 3. David Kindleberger, of Ohio; 4. T. D. Grafton, of Arkansas; 5. R. L. Weber, of Pennsylvania; 6. R. J. Freeman, of Virginia; 7. W. E. Taylor, of Virginia; 8. B. W. Green, of Virginia; 9. T. McMaster, of Pennsylvania; 10. T. W. Herty, of Georgia.

Assistant Surgeons T. J. Turner, W. G. Hay, R. P. Daniel, and W. S. Hood, were examined by the Board, and having acquitted themselves satisfactorily, were recommended for promotion.

ARMY MEDICAL APPOINTMENTS.—The Army Medical Board recently held its meeting in this city, and made the following appointments to the Army Medical Staff:—1. George Sackley, M.D., of New York; 2. D. C. Peters, M.D., of New York; 3. C. H. Alden, M.D., of Pennsylvania.

Assistant Surgeons A. B. Hasson and T. Letherman, having been examined, were found qualified for promotion.

CHICAGO MEDICAL COLLEGES.—In our last issue we announced the resignation of Dr. Johnson, of the Chair of Physiology and Pathology, in the Rush Medical College. Since then Dr. Davis, Professor of the Principles and Practice of Medicine, and Dr. Byford, Professor of Obstetrics, have also left the school. These gentlemen have united in founding a new institution, under the name of the Lind University. The faculty consists of the following members:—Dr. Davis, Practice of Medicine; Dr. Johnson, Physiology and Histology; Dr. Andrews, Surgery; Dr. Isham, Surgical Anatomy; Drs. Rutter and Byford, Obstetrics; Dr. Mahla, Chemistry; Dr. Hollister, Descriptive Anatomy; Dr. Taylor, Pathology and Hygiene; Dr. Spafford, Medical Jurisprudence. The Chair of Materia Medica has not been filled. We have not heard of any appointments having been made to fill the vacant chairs in the Rush Medical College.

RE-INTERMENT OF THE REMAINS OF JOHN HUNTER.—On the twenty-first of March, the remains of this illustrious surgeon and physiologist were re-interred in Westminster Abbey, with the consent of the Dean and the Chapter. His coffin was discovered by Mr. Buckland, in the disinterment of the bodies from the church of St. Martin-in-the-Fields, London, and was in a good state of preservation, although Mr. Hunter has been dead for upwards of sixty years. Upon a brass plate were inscribed the family arms and these words:—"John Hunter, Esq., died 16th October, 1793, aged 64 years." Underneath this inscription was affixed the following:—"These remains were removed from the Church of St. Martin-in-the-Fields, by the Royal College of Surgeons of England, March 21st, 1859." Mr. Baillie, a grand-nephew of Hunter, as well as the committees of the different London medical institutions, attended the funeral.

NECROLOGICAL NOTICE.

DR. WILLIAM M. BOLING, of Montgomery, Alabama.—We announced in our last number the death of Dr. Boling, which took place on the fourth of March, 1859, after a lingering illness. Since then we have learned from our esteemed collaborator, Dr. Bozeman, who knew him intimately for many years, that Dr. Boling was born in Baltimore County, Maryland, on the fourteenth of July, 1811, and when eighteen years of age moved to Greensburg, Pennsylvania, having at the time nothing more than an ordinary English education. While here he made choice of the profession of Medicine, and in 1833 entered upon its study in the office of Dr. S. P. Brown.

He prosecuted his studies with great assiduity, applying himself not only to his text books, but to the Greek, Latin, and French languages, a very good knowledge of all of which he soon acquired. He attended his first course of lectures in the Jefferson Medical College, 1835–6, and soon after the close of the session he commenced to practice in Coosawda, Antauga County, Alabama, where he remained until the fall of 1837, when he married, and returned to Philadelphia, to attend his second course of lectures in the Jefferson College. After graduating the following spring he returned to Alabama, and settled in Montgomery, where he continued to reside up to the time of his death.

As to the success Dr. Boling met with in his profession, and the position he occupied as a writer and teacher, we have only to refer to the periodicals of the day. His contributions to the medical literature of our country were always well received. Many of his papers possess great merit, and none, perhaps, more than the one entitled "Observations on Remittent Fever," published in the *American Journal of the Medical Sciences*. In this essay he has shown most clearly the wide range of his thought, the shrewdness of his intellect, the force of his reasoning powers, and the knowledge he possessed not only of the resource of his art, but of nature herself. His views here set forth have been largely quoted by nearly, if not all, subsequent writers upon the subject in this country.

In 1848 he was invited to the Chair of Materia Medica in the Memphis Medical School, which he accepted, but filled only one session. He gave, however, ample proof of his ability as a teacher, and endeared himself to a wide circle of friends throughout the South and West.

Soon after leaving Memphis he received a call from the Transylvania Medical School, to the Chair of Obstetrics. In this school he delivered one course of lectures, (1849–50,) and as a thorough teacher of the branch assigned him he gave entire satisfaction. After the session closed he resigned his chair and returned to his home in Alabama.

There are other positions which he was called upon to fill, highly complimentary; such as President of the Alabama State Medical Association, and Vice-President of the American Medical Association. He never accepted a professorship in any other school after he left Transylvania, although several advantageous offers were made him. Having a wide circle of friends, he preferred remaining among them to being a public teacher. The result of this was an overwhelming practice. For several years he bore up under his immense physical and mental labor, but at last his feeble frame began to give way under it. In the spring of 1853 paraplegia showed itself, from which, although better at times, he never recovered. Notwithstanding the gravity of this infirmity he continued, as long as he was able, to do some practice, and never ceased to take that interest in medicine which had characterized the whole course of his professional life. His disease gradually grew upon him until last winter, when he became almost completely helpless, and finally died from the prostrating effect of nausea and vomiting occasioned by an attack of intermittent fever.

Thus ended the short but useful career of a man, who may truly be said to have been a martyr to his noble calling. Had he enjoyed the advantages of many, and been more fortunate in the selection of a wider field for his labors, we can safely assert he would have been second to no one in the ranks of his profession.

The private character of Dr. Boling was spotless. His moral worth, coupled with the kind and generous impulses of his heart, rendered him one of the noblest of men. His intercourse with the world was always characterized by the strictest integrity. He loved truth and candor. To many his manner appeared austere, though not to such an extent as to render him unapproachable. Dignified and self-possessed, he always commanded respect. In the relation of husband and father, the goodness of his nature was ever dominant; gentle and affectionate, he smoothed the asperities of life and diffused happiness around him. His name will long be cherished by his many friends.

Bi-Monthly Bibliographical Record.

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FOREIGN.

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THE

NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

SEPTEMBER, 1859.

Analytical and Critical Reviews.

ART. I.—*Medical and Surgical History of the British Army which served in Turkey and the Crimea, during the War against Russia, in the Years* 1854–55–56. 2 vols., pp. 560 and 480, folio. London, 1858.

LIKE most of the "Blue Books"* which are printed by authority of Parliament, and which are often the result of parliamentary inquiries, through committees appointed for the purpose, the volumes whose title heads this article convey a great deal of information on the matters of which they specially treat. Every one has heard of the war between Russia on the one side, and France and England, and, after a time, Sardinia, on the other. The Crimea and Sebastopol became familiar as household words, and almost equally wide-spread was a knowledge of the shortcomings of the British government at home, and of many of its official agents at the seat of war, respecting a mismanaged commissariat and the consequent sickness and mortality among the British troops, especially in the winter of 1854–55. There were certainly blunders on a large scale committed by these parties during the first year of the war; but, at the same time, it must be admitted that, great as were the sufferings of the British army from disease before Sebastopol, they were, as we learn from subsequent and semi-official accounts, fully equaled, if not exceeded, by those of their French allies, a fact which we shall probably take occasion to demonstrate before long.

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* Some of our readers may not be aware that the designation of these booksi derived from the color of their paper cover. All of the volumes printed under authority of Parliament wear the same livery.

The first of the two volumes before us contains the "Military History of Individual Corps" of the army, and an Appendix in which are presented reports on the climate, medical topography, and diseases of the provinces of Turkey, which were either the actual seat of war, or would be traversed by the troops in their expected march to the Danube. To these documents are added returns, showing the stores and other materials of the commissariat, including "Medical Comforts shipped for the Hospitals in the East," and a list of Hospital and of Medical and Surgical Stores sent to the same quarter; also, the "Names and Period of Service of all Officers who served in the Hospital Staff in the East."

The second volume is in two Parts. I. The "History of Disease," the several sections of which make us acquainted, first, with the topography and climate of Bulgaria, a Turkish province, and next, of the Crimea. To these sections succeed others, giving a general sketch of the causes of disease in the army and in the different sections of the service, then separate accounts of cholera, diseases of the bowels, fever, scurvy, frost-bite and gangrene, diseases of the organs of respiration, mortality, invaliding of the army on account of disease, and discharge of men from the service in consequence of disease incurred during the war. Part II., being a "History of Wounds and Injuries," contains, after an introduction, a section headed "General Observations," a second on specific wounds and injuries, a third on amputations and resections, and a fourth, entitled "Concluding Observations." An Appendix furnishes tables of meteorological observations, and returns of the sick and wounded who arrived at Scutari, and at Abydos, Smyrna, and Renkoi, or who died on board the transport ships between these several places; the whole being terminated by general hospital returns.

Having placed our readers in possession of the table of contents of the two volumes of "Blue Books," we shall next point out the subjects which will chiefly engage our attention in the present article. Our business will be with the "Medical History of the British Army," in the three years already mentioned; leaving the surgical part to be treated of on another occasion. We shall not attempt to repeat the details, or even to give an analysis of the military medical history of individual corps, which make up the larger part of the first volume; we may revert to it as occasion requires, when speaking of the diseases separately, as described in the second volume. There will still be a large field left to us for profitable gathering of materials which have an abiding interest to the medical practitioner, exhibiting, as they do, features in common and often identical with those which he is called upon, almost daily, to scan.

We begin with the medical topography of the provinces already referred to, as we find it in both volumes. The ground here is entirely new, and as the descriptions are given in a work inaccessible to the great body of our profession, we may properly anticipate a favorable reception of our extracts and summaries. Servia, though governed by its own prince, is still under the sovereignty of the Turkish Sultan, to whom it pays an annual tribute of $300,000. Its northern boundary is the Saave and the Danube; it touches Bulgaria on the east, and is separated from Bosnia on the west by the Dwina, while on the south it is bounded by a portion of the mountain range which extends from the Gulf of Venice to the Black Sea, and the eastern part of which is the Balkan proper.

"Servia is a mountainous country, well wooded, productive, with a rich soil, and a climate severe in winter, but warm in summer, ripening the grape, to be capable of giving rich, generous, and wholesome wines. The grain principally grown is maize. Herds of cattle are not numerous; hogs, fed almost entirely on the acorns of its vast forests, are largely exported from this country. Agricultural produce is conveyed on rudely-made bullock-drawn carts. The population amounts to one million."

The province of Bulgaria stretches from west to east, in a length of three hundred and fifty miles, between the Danube on the north, and the Balkan (the Mount Hæmus of antiquity) on the south; it touches Servia on the west, and its eastern side is washed by the Black Sea. This province, as described by Dr. Dumbreck, Deputy Inspector-General of Hospitals, may be divided into three portions: "First. The western Danubian portion, consisting of the often swampy banks of that river, rising gently and at a little elevation; vast, treeless, bare, scarcely cultivated pastoral plains, scantily supplied with water; the capital of this is Widdin. Second. The mountainous district, stretching from west to east, from near Nissa, in Servia, across the country to Tirnova and Shumla, which, with Sophia, are its great towns. Third. The districts of the Dobrinja, a peculiar tract at the northeastern end of Bulgaria, consisting principally of steppe-like country, characterized by low undulations, and the rank nature of its grassy vegetation, which attains an extraordinary height. This portion of the country may be regarded as most insalubrious. The principal sea-port, Varna, is the great town of this district."

Dr. Hanbury, author of the "History of Disease," in volume second, gives also a sketch of the topography and climate of Bulgaria, in this volume. Of the numerous mountain ranges extending northward from the Great Balkan, that which is of most immediate interest to us, on the present occasion, is one which springs from a point almost due north of Adrianople, stretches in a northwestern direction toward Shumla, and thence extends, though in a less continuous and regular manner, as a chain of hills of considerably diminished altitude, to the eastward as far as Varna. To the district bounded by this mountain range on the west and north, the Black Sea on the east, and the Balkan on the south, were the movements of the British army limited. The peninsula of Dobrudscha, of which so much was said in the public papers during the first year of the war, is described by Dr. Hanbury to be the most insalubrious part of the country, in its being flat, swampy, and liable to inundations. How are we to reconcile this with the description of the same district in Murray's Hand-Book of Turkey, in which the Dobrudscha is represented to be "a wilderness; its soil porous limestone, which retains no water, and furnishes no springs on the surface? Drinking water is obtained through a few deep wells. This desert extends south of the wall of Trajan, nearly as far as Basirijik and Varna." Our puzzle is increased if we are to suppose that this is the same district which Dr. Dumbreck calls the Dobrinja, noticed above. Its topography corresponds closely with the Dobrudscha.

Varna was the headquarters for a time of the British and French *corps d'armée* which were intended to co-operate with the Turks in their campaign on the Danube, or, if necessity required, in case of disaster, in their retreat to and occupation of Shumla and the passes of the Balkan. Varna, with a population of upwards of 15,000, is situated on the northern side of a small bay of the Euxine or Black Sea, in 43° 12′ north latitude, and 27° 55′ east longitude. The south or opposite side is formed of a lofty promontory three hundred feet high, and rising almost perpendicularly from the sea. It is called Point Galata Bournu, and is continuous with a chain of lofty hills thrown off from the eastern extremity of the Balkan Mountains, north of Cape Emineh, and which skirt the sea-coast for a distance of twenty miles. The streets of Varna run in tortuous confusion from east to west. The habits of the people are extremely filthy; and although drainage from some of the public buildings exists, it is imperfect and ineffectual. Odors and impurities of every kind defile the streets. The condition of the town was, however, much improved for a time by the French, for as soon as their *état-major* was established in Varna, large parties of soldiers and *gens d'arme* were employed in removing the filth, and many hundreds of cart-loads of what would have proved excellent manure were carried away from the principal thoroughfares. The harbor is about three and a half miles wide at its mouth; its depth inland is nearly three miles. At the head of the harbor the River Devna empties itself.

With the course of this river and the Pravadi, with which it joins at a distance of about four miles from its boggy sources, the most interesting features in the topography of that part of Bulgaria, as far as the army was concerned, is intimately connected. The river forms in its course, through a valley or plain, two lakes, the Upper and the Lower Devna; the first commencing at a point twelve miles from Varna, and the second, and the larger of the two, extends to within half a mile of the town; its extreme length is five miles, and its average breadth is less than a mile. Many parts of the valley are represented to be very marshy, especially on the borders of the lower lake, to the east of Alladyn. On the opposite side of the harbor, between the lake and water of the bay, there is an extent of marshy ground. Higher up, near the junction of the Devna with the Pravadi, there is an extensive swamp.

The climate of Bulgaria is determined more by the physical character of the province than by its latitude, which is between 42° 50′ and 44° 20′ north. Its position between the range of the Balkan Mountains on the south, and the broad expanse of the Danube on the north, and beyond it, of the still more distant Carpathian Mountains, disposes the wind to pass as a current from east to west, or the reverse. In winter, with northerly winds, the thermometer falls at times to 30° below zero, while in summer the prevailing winds, which are from the south, are often attended with a very elevated range of temperature,—in the tents, 100° F. Great and frequent transitions occur both in winter and summer. The spring is extremely short, for almost as winter ends, the summer heats are ushered in. The summer may be said to begin in April, and to last to the middle or end of September. The autumn, like the spring, is very short, and the severity of winter is usually felt in the middle of November. Autumn and winter are the seasons of rain. The sudden reduction of temperature during the night, in summer and autumn, to the extent, toward the evening, of 15° or 19° F., causes a heavy dew to form; and in the early mornings, the valleys are for many hours filled by dense clouds of fog, which roll into them along the hill-sides during the night. Dr. Linton portrays still more contrasted features of the climate of Bulgaria than those just presented. It is in vain, he says, to seek for a definition of this climate, and its nature can only be estimated by its effects; for, although a consumptive patient might, in some years, do as well here as in Algeria or Egypt, yet in others he would suffer as severely as on the east coast of Scotland. The finest morning in April, with almond-trees in full blossom, and nightingales scarcely hushed from their night-long melody, may soon be overcast, and the evening close in with a snowstorm; and the bright, clear frost of January is frequently thawed by a heavy sirocco wind, which raises the thermometer 20° in an hour.

The principal diseases of Bulgaria are, in the summer and autumn, low remittent and intermittent fevers, which are most prevalent in the district of the Dobrudscha and the marshy banks of the inland streams. On the approach of winter the fever becomes more of an adynamic type, and as the season advances, catarrhal and rheumatic affections, and typhoid pneumonia, are common; the period of spring and the first few months of summer are, in general, remarkable for the great immunity from disease which then prevails. The difference of temperature between day and night in July and August was the most extraordinary feature of the climate; and there can be no doubt, in Dr. Hanbury's opinion, that, attended as it was by such a heavy fall of dew, it was this which proved particularly injurious to the troops. In the actual state of our knowledge, we can hardly go farther than this, in the way of etiological explanation, without resorting to the mystic agency of malaria. Descriptions are given of the positions, in a sanitary point of view, occupied by the different divisions of the British army while stationed in Bulgaria. These were, in the vicinity of Varna, and on the shores of the larger Devna Lake; at Alladyn, on a low, wooded ridge, on the banks of the stream connecting the two lakes; at Devna, along the river, and on the shores of the lakes; and at Monastir, an elevated plateau 2300 feet above the sea level, to the southwest of Devna. We shall not follow our text in enumerating the different spots in this region which were occupied by different corps of the army before their embarkation in the latter part of August, 1854, for the Crimea. It appears that one of the objects of primary consideration in the selection of ground for an encampment was the readiness for procuring a supply of water. This would be more particularly the case with the cavalry regiments. The supply was better and more abundant on the heights to the north and south of the Devna lakes and river than in the neighborhood of Varna or of the village of Devna.

Dr. Dumbreck, in his itinerary and topography of the localities visited by him, speaks of Belgrade, the capital of Servia. In all directions from this city, except inland, "we see a fever-producing country; the desolate-looking Banat of Temesvar stretching far on one side, and the low, undrained tract, lying between the Saave and Semlin, are both unhealthy. The Saave often escapes from its banks, and then we have part of the lower town under water. Then follow the fevers of the summer months, which prevail especially in this quarter of the city. The soldiers in the elevated citadel would be comparatively safe, but the sentries furnished to this district are exposed to the influence of its malaria, and thus contract periodic fever." One addition to the many anomalies in the miasmatic hypothesis of the etiology of periodical fevers, is furnished in the case of the Valley Maidanpeck, traversed by the River Peck. "This valley is rich in iron ore, and is thickly inhabited. Maidanpeck lies on an oblong square-shaped spot, closely hemmed in on all sides by precipitous mountains; no marshes, and the stream running through the village lively, with sound banks. Spite of no apparent excitants of disease, there is no place in Servia so unhealthy as this. There is usually a resident medical man, but at the period of my visit he was absent in ill health." Such a spot in the United States would not be left to the uncertain care of one medical man. Three physicians at least would rush in to fill up so good an opening. "Periodic fevers," continues Dr. Dumbreck, "are found here during nearly the whole year. From the middle of July to the end of September a most severe form of this prevails, of the tertian and quartan type. General dropsy, ascites, and splenic enlargement are most common here. The unhealthiness of this place is proverbial all over Servia; they talk of its white population lasting only from three to four years, but I could not have any authentic information on the subject. About four hundred of its inhabitants are engaged in procuring the iron ore; they suffer more than wood-cutters or other laborers."

Of Widdin, a most important Bulgarian city, we are told that it lies on a dead level, and that the Danube washes its northern walls. The elements of disease exist everywhere, and in excess beyond Dr. Dumbreck's former knowledge of Turkish towns.

"To persons inhabiting the cities of western Europe, even those the least famed for their cleanliness, the incredible filth of a Turkish town cannot be imagined; everything bears the marks of squalor and decay. A well-known author, Ranke, speaking of Widdin, says: 'Its fetid bazaar, and its streets strewn with putrid carcasses, round which the vultures swarm, tell plainly that the majority of its 20,000 inhabitants are Mussulmans.' And speaking of another town in Bulgaria, he says: 'But the stench of the air gives sufficient evidence of the presence of Mussulman habitations.'

"Fever, and the numerous ills depending on the want of sanitary and police measures, must always hover over these unclean abodes, and it is not to be wondered at if the sanitary state of Widdin is, while I write, of the most unsatisfactory kind."

The condition of the military (Turkish) hospitals, at Widdin, was very bad. The large surface of the interior court of the principal one was covered with stagnant water.

"The wards are large, containing [each] about sixty sick; they are boarded and matted. The men lie in double rows round three sides of the room. There are no bedsteads, but the bedding is good; the mattress of straw, thick and comfortable; above this a thin one of cotton. The sheets clean, the diets carefully prepared, but the atmosphere is electric with the elements of disease, from the want of ventilation, and from the stuffy fumes of the detestable 'mangal.'"

Other hospitals in the place were in a much worse condition. The air in all of them was laden with the seeds of disease. "Several of the medical men employed—fifty-six—had been attacked by the typhoid disease, but in their instance it was mild and manageable, for the very obvious reason that they were not treated in the poisonous atmosphere of the wards where they contracted the ill."

In relation to Turkish military hygiene, the following scale of hospital diet is not without interest:—

"1st. Rice, 13½ drachms, boiled in water.

"2d. Rice, 13½ drachms, and bread, 30 drachms.

"3d. Rice, 13½ drachms; bread, 50 drachms; meat, 30 drachms.

"4th. Rice, 13½ drachms; bread, 50 drachms; meat, 50 drachms.

"5th. Three days prior to the discharge, the barrack ration.

"The medical officer has it in his power to add to the fourth rate of diet any extra he thinks necessary—fish, wines, eggs, etc."

The treatment of disease by the medical men at Widdin, is represented to be rational and scientific; they deplete cautiously; they use calomel more freely than continental physicians do, or at least did twenty years ago. Vaccination is practiced in the army, and among the Turks generally. Dr. Dumbreck was told that it is carefully looked after in the army. He doubts much its being carried out extensively in civil Turkish communities.

Lom Palanka, at a distance of ten hours from Widdin, rises from the River Danube, over some irregular sand hills; it is said to be salubrious, for although periodic fevers are not unknown, they are neither frequent nor severe. The cause of these diseases "is referred to the too free use of fruit, but there is a much more evident reason in the appearance of a small alluvial plain to the eastward of the town; this is traversed by the River Lom, and is subjected to occasional inundations, and, of course, malaria follows." A large proportion of a cavalry regiment, about two thousand strong, stationed here, were suffering (March) from pulmonary diseases—pneumonia and bronchitis.

The Bulgarian peasant cannot promise himself either health or longevity from the dwelling which he occupies. It is constructed as follows: "A deep trench, like the foundation of a house, is dug; wattles form a pointed roof over this; earth is then thrown over the wattles, a hole is made for a chimney, and the house is completed: these dwellings are, therefore, mere burrows."

Tirnova, once the capital of the ancient Bulgarian kings, is a mountain city, most picturesquely situated on the bank of the River Yantra. It is a place of great trade and bustle, with a population of 10,000; but its streets, even in dry weather, were filthy in the greatest degree. Notwithstanding this drawback, it may be stated, for the encouragement of those who see a due affinity between health and dirt, the town and neighborhood are very healthy. This town is deemed to be the best fitted for hospital establishments on a large scale.

Shumla, which in a strategical point of view is so important, as guarding the chief passes of the Balkan on the north, has a population of 60,000. This mountain stronghold "is not free from fevers, amenable to treatment in spring, grave and tedious in autumn. Typhus is not infrequent in winter; filth, poor living, neglect of every sanitary precaution, are palpable enough reasons for the presence of this form of disease. The city is seething with every imaginable description of filth. The winds are high and keen here, and pulmonary affections are those from which the large force now in Shumla suffers."

Rumelia, the Turkish province separated from Bulgaria on the north by the Balkan Mountains, contains the two chief cities of European Turkey, viz., Constantinople and Adrianople. The height of the Balkan range is, in some places, upwards of 7600 feet, and the highest pass, "the Shibka," leading from Kazanlik to Gabrova, is 4350 feet above the level of the sea. The summits of the Balkan Mountains are generally covered with snow, and their slopes with oak, beech, and other wood of various kinds. The chief rivers of Rumelia are the Maritza, the Tundja, the Arda, the Vopoche, and the Stanimak. The Maritza, the ancient Hebrus, has its sources near Trajan's Gate, in the northwest angle of the Balkan Mountains, flows through the centre of Thrace, and reaches Adrianople, whence, after receiving the Tundja and the Arda, it runs south and southwest to the Ægean Sea, and enters the Gulf of Enos, to form the port of Adrianople.

As relates to the climate of Rumelia, it may be described as nearly the counterpart of that of Bulgaria. Both provinces are marked, in this respect, by great extremes and sudden vicissitudes of temperature. The average quantity of rain which falls at Constantinople in the year, amounts to 361 parts in winter, 350 in autumn, 191 in spring, and 90 in summer. The north wind blows 167 days in the year, the south 63, and the northeast 47. The medium temperature throughout the year was nearly 60° F. (59·65.) The months which are marked by the two extremes are December, the mean of which is 47·25° F., and July, which is 75·79°. The barometer ranges within the narrow limits of 29·60 and 29·87 inches. Dr. Linton, to whom we are indebted for a knowledge of the climate and topography of Rumelia, is of opinion that the country, with few exceptions, is healthy; and such exceptions are chiefly confined inland, in the vicinity of the River Maritza and its tributaries, in a few localities where, forming marshes, it either overflows its banks, as at Adrianople, at Philippolis, and at Mustafa Pasha, or where it is brought into use for the purpose of irrigating large extent of rice grounds, as at Philippolis, at Tatar

Bazarjick, and at Buckilu, or where its banks are low or descaling, as at Papauslu, and at Mustafa Pasha. The people exhibit, generally, a robust, strong, and healthy appearance, and seem to be capable of enduring a large amount of fatigue. There is a remarkably small number of practicing physicians.

As to the prevalent diseases in Rumelia, we are told by Dr. Linton that the intermittent fevers of the country generally begin in June, and are followed during the months of July and August by remittent and typhus fevers, gastro-enterites, and sometimes dysentery; and that only some of the graver fevers are occasionally fatal. In most regions in which periodical fevers are met with, the remittent precedes the intermittent form. In the country now under notice, intermittent is said sometimes to be the precursor of petechial typhus, and remittent fever does not seem to be of such frequent occurrence as the other forms, on which continued fever sometimes supervenes. At Adrianople, with a population of 90,000 to 100,000, the greatest number of deaths occur during the winter months, from inflammatory complaints—catarrh, pneumonia, pleurisy, pericarditis, rheumatism, etc., complicated with typhus fever. The mortality among the military in this city is usually three per cent. When the Russians were there, in 1829, their loss by deaths was three hundred daily, chiefly from the plague. At Philippolis, the greatest mortality occurs from fevers, during the summer months, a fact to be attributed to the very great extent of swampy ground and rice cultivation, etc. in its vicinity. Immunity from fever can always be secured by a removal to the higher grounds during the summer months, a course which is almost invariably pursued by the wealthier portion of the population. Typhus petechialis is often met with here, and proves fatal in many cases. The intermittent fevers of the country generally appear in the tertian or quotidian form, and the practice usually adopted is to exhibit quinine in large and repeated doses till cinchonism is produced; and for the better securing the patient against a relapse, this medicine is continued in smaller doses for several days after all fever has disappeared. Quinine failing to produce the desired effect, arsenic is had recourse to. Sulphate of quinine and cyanuret of iron, in the proportion of two parts of the former to one of the latter, is sometimes prescribed. It is pleasant to see the wide diffusion of therapeutics founded on identical scientific observation and experience in countries so distant from each other, so that the Mussulman inhabitant of an interior province of Turkey undergoes the same treatment for periodical fever as the Christian denizen of the Mississippi Valley. In the inflammatory affections, blood-letting is carried to a considerable extent, which, together with purgative and emetic medicines, the people are said to bear well; but the latter less so at Constantinople than in the interior, a difference everywhere and always observable between the inhabitants of a large city and those of the country. Recourse is often had to leeches, which are readily procured, and are cheap. Epidemics of scarlet fever and of measles, and occasionally of smallpox, occur during the spring and summer months, as in other countries. Vaccination is said to be regularly performed, at least in all towns and in their immediate neighborhood, where any medical practitioner resides, as at Adrianople, at Philippolis, at Kaloferi, at Kirklissia, and at Tchorlu. Erysipelas is of frequent occurrence in the spring. Phthisis pulmonalis rarely occurs among the Turks, but it is occasionally seen among their black slaves. Scrofula, in damp and moist situations, is not uncommon. Madness, suicide, hydrophobia, elephantiasis, and goitre, are seldom seen. Stone in the bladder is rare, four cases only having been known to occur in Philippolis during a period of ten years. This city contains 70,000 inhabitants, of a mixed race. The intoxicating liquor called raki, the product of distillation from the husks of the grape, is drunk at Adrianople and other towns to a great extent: it sometimes produces delirium tremens and impotence. This latter effect was said by Larrey to be caused by a spirit obtained from the dates, which was drunk by the French soldiers in Egypt. Contrary to what had been previously advanced by Dr. Linton, respecting the general healthiness of this part of Turkey, he tells us, that few strangers escape either fever in the summer, or inflammatory affections in the winter. Such painful processes of acclimation would be thought a great hardship for European emigrants to undergo in Middle or Western Virginia, or in East Tennessee, regions analogous in their geographical features and isothermal lines to Bulgaria and Rumelia. There has been no plague in the country since 1842.

What remained to complete the outline view of that part of Rumelia between Adrianople and Constantinople, and between both of these cities and Enos, on the Ægean Sea, is furnished by Mr. J. Mitchell, staff surgeon, first class. The country between Adrianople and Constantinople is undulating; the soil rich in no ordinary degree; and there are no marshes, with very few exceptions of limited range. The distance between the two cities is one hundred and forty-five miles. Constantinople has a population of 700,000 to 800,000, and is on a level with the Sea of Marmora. The mortality is one in forty-six, annually. When fever prevails in this city its complications are usually abdominal. About two and a half per cent. of the strength of the military are usually in hospital at Constantinople. "Consumption is not common among the Turks, Greeks, or Armenians, but the negro race are, as in other countries where they are expatriated, singularly liable to it. Hydrophobia does not often occur, though Constantinople swarms with dogs." Phthisis is more frequently met with among the military than among civilians; and young recruits, who come from remote parts of the Turkish empire, are most subject to it. Of the months, October is the most healthy, and August the most unhealthy. Mr. Mitchell believes the hospital accommodations at Constantinople to be abundant. In the event of pressure of the sick and wounded, the very ample and spacious corridors would afford additional space for beds. The mosques alone would afford accommodation for 100,000 men—an appropriation of these edifices which would not be looked upon with much complacency by the faithful Mussulman.

Under the head of "Camps and Positions," we gather information which harmonizes with the accounts of nearly all travelers in both European and Asiatic Turkey. The hydrological appliances described might well be imitated in Christian lands.

"The numerous high ridges and valleys which intersect the line from Constantinople to Adrianople offer very many favorable positions for camping, either temporarily or otherwise. There are fountains of good water at short distances along the roadway, besides those in every town and village. The water is conveyed to the fountains in all cases through earthen pipes. The Turks pay a sort of religious attention to these fountains, as an act of charity for travelers as well as an act of necessity for themselves. The fountains never fail in a good supply of water, except when the pipes get out of order, which is a thing of rare occurrence."

Enos, already mentioned as at the mouth of the Maritza River, is ninety-six miles south from Adrianople, and one hundred and fifty-four southwest from Constantinople. This town contains 10,000 inhabitants, who, in general, have a healthy appearance. It suffers lightly from intermittent fever in July and August, which is seldom followed by dropsies, visceral enlargements, or indeed by any subsequent deterioration of health.

On the Topography and Climate of the Crimea, our notes and extracts cannot be as full as would be justified by the latitude of description in the first part of the second volume of the History now before us. The peninsula of the Crimea is situated between 44° 20′ and 46° parallels of north latitude.

"The country is topographically divided into two portions; about three-fourths of the peninsula toward the north and west represent a vast elevated plain. This extensive plateau or steppe is, for the most part, dry and sandy, and the soil is either barren or barely fit for the purposes of pasturage, and a large district toward the northwest is impregnated with saline matters. Along the sea-coast lakes are frequently observed, while from the waters about the isthmus of Perekop large quantities of salt are annually raised in the interests of commerce. The remaining or mountainous portion of the Crimea extends along the shores of the Black Sea from Sebastopol on the west, to Kaffa, or Theodosia on the east, and is about ninety-five miles in length, and from ten to eighteen miles in breadth. The principal range of hills extends in a direction from west to east, and it varies in height from one thousand to five thousand feet, the point of culmination being in the Tchatar Dagh, south of Simpheropol. The division forming the steppe is considerably above the sea level, and the coasts of the peninsula are of difficult access almost throughout. The district of the Crimea which was the scene of military operations during the late war comprises that portion of it forming the southwestern extremity of the peninsula, formerly called the Heracleatic Chersonese; its limits are found between 33° 20′ and 33° 46′ east longitude, and 44° 20′ and 45° north latitude. It is bounded on the north by the harbor and city of Sebastopol, on the northeast by a range of hills which, carried round from the western coast north of the harbor of Sebastopol, become more elevated in the Inkermann and Mackenzie Heights; on the east by the mountain range which stretches from Balaklava along the southern coast, and on the northwest and southwest by the sea. The district thus defined divides itself into two portions, a western and an eastern division; the former represented in an irregular barren plateau, of varying elevation, while the latter comprises the valleys of Balaklava and Tchernaya, the village and harbor of Balaklava, the heights overhanging Balaklava to the east, and the elevated ground in the vicinity of Kamara, to the northeast of Balaklava, looking down upon the valley."

The face of the triangular plateau, south of Sebastopol, has a general inclination to the northwest; from the sea in this elevation the ground rises gradually over a succession of undulating hills, flat downs, and shallow valleys; but proceeding southward from Sebastopol the ascent is much more abrupt, and follows a series of winding ravines and elevated ridges to a height varying between five and six hundred feet,—the general level of the position upon which the main body of the English army was encamped. A line drawn from the inner harbor of Sebastopol, due south to the Monastery of St. George, divides the plateau into an eastern and a western portion; the former, the site of the English occupation, is the most elevated; the latter, the western, was covered by the French troops, and slopes down toward the sea between Cape Chersonese and the mouth of the harbor, where the coast is indented by several shallow bays, often with low shelving shores. A deep ravine, running down to the inner harbor, marked the course of the northern portion of the line, and divided the English from the French camp. The position of the former before Sebastopol overlooked the great harbor on the north and the valley of the Tchernaya on the east. The village of Balaklava consists mainly of two streets, running parallel to each other and the bay, in different terraces, connected by cross lanes. A military school and a Greek church were its most prominent architectural objects. The harbor of Balaklava is a narrow inlet of the sea, in the southwest coast of the Crimea, formed by a breach in the southern mountain range. At its entrance it is extremely narrow; its greatest length is half a mile; for two-thirds of its extent it is very deep, but toward its head it expands, becomes shallow, and receives the water of a small stream which drains the Valley of Balaklava. The Marine Heights are a group of hills to the east of the town, on which a portion of the army was posted.

The geological basis of the allied occupation consists, to a great extent, of the limestone formation; on the plateau before Sebastopol the tertiary form is that on which it is chiefly exhibited; but to the eastward of the Monastery of St. George, and of a line extending thence toward Kamara, old mountain limestone and conglomerate are observed; while the hills which extend across the Valley of the Tchernaya abound in soft calcareous rock and green sand. This valley is watered by a river of the same name, the margins of which "are low and alluvial, and the river frequently overflows its banks for some distance toward the termination of its course; and there is reason to believe, that during the summer and autumn of 1855, fevers of the periodic type and of an adynamic kind prevailed to some extent among the French and Sardinian troops, produced by the malarious exhalations of the locality." The configuration of the ground, the plateau before Sebastopol, was highly favorable to natural drainage, and the rain which fell on it, except in a few isolated localities, rapidly ran down the hill-sides, or made its way into the ravines through the substratum of porous rock, and was thence carried into the harbor.

We find recorded in this section of the history, instances of the effects of very limited localities on the health of the troops encamped on them. The 42d and 79th Regiments (Highlanders) occupied an intrenched camp on the heights, and to the right of Balaklava. The camp of the first was dry, beautifully laid out and kept, and proved extremely healthy. The 79th was posted on higher ground, and, at first sight, would seem to have had a better situation for their camp than their fellows of the 42d; but there were several marshy spots and springs in the vicinity. The surface of the ground was always damp, and no amount of draining sufficed to correct this property. The foundation of the huts, owing to the exposed position and the dread of severe storms, increased this evil, as they were excavated some two or three feet. A deep trench was cut round each hut, leading to main drains. Each hut was calculated to accommodate twenty-five men. Provision was made for ventilation; but neither this nor white-washing and fumigations prevented the occurrence of fever, which only ceased after the removal of the regiment to higher and drier ground. And again, in the wing of the 2d battalion Rifle Brigade, which occupied the high promontory overlooking the sea at the southern extremity of the Balaklava lines, there was little or no disease. At a later period, the 31st Regiment was put into the huts which had been occupied by the 79th, and it was attacked with cholera, as were also two batteries of artillery and a small-arm brigade, which were encamped outside the lines, just above the place were the slope terminated in the plain, and where the soil was of the same nature. The whole encampment was moved to a knoll out on the plain, with the effect of an immediate improvement on the health of the men. One cause of impurity of the air (the privies) was prevented by the judicious location of these latter, such as at ravine-sides, etc., and the strewing of quick-lime with occasional intermixture of peat-charcoal. The graves were strewed with the same substances. Precautions of this nature were not uncalled for, as fever of a typhoid form appeared in the regiments occupying the low slope of the hill overhanging the large burying-ground of the Division. Contributing to the same morbid effects were the exhalations from the slaughtering ground. Purifications of this and the old burial-grounds, and selecting more distant localities in their stead, produced a removal of the disease. Diarrhœa prevailed to an extraordinary extent, and cholera continued its attacks from the first night to the last day of the encampment of the 10th Hussars in the Valley of Varnoutka, the low grounds of which were covered with a rank vegetation, tracts of marshy ground here and there, and it was shut in by mountains densely wooded. Of Balaklava, it is said that it embraced so many sources of impurity, accumulated mud and putrescent matter of every description, that it was utterly impossible to analyze the special influence of each, certain though it were that their conjoint action proved for a time disastrous and extensive in its effects.

On the climate of the Crimea, Dr. Logan makes the following observations:—

"The heat, during the summer solstice and in the course of the autumn, on the plateau before Sebastopol, rarely if ever exceeded 85° or 87°, and the nights were invariably cool and refreshing during these seasons. The principal characteristics of the region were the occasional occurrence of a summer storm, and frequent vicissitudes of rain and lowered temperature, features of climate everywhere appertaining to mountainous formations, and of which character Southern Crimea pre-eminently partakes.

"The autumn equinox this year was marked by wet and chilly weather, yet of not unusual duration.

"No more genial or healthy climate could there well be than that of October and the greater part of November, 1855, a blandness equal to that of Italy, in striking contrast with a portion of November of the previous year, so marked in the history of the campaign.

"The autumn did not break up before the twenty-first of November, but snow soon appeared on the mountain summits; hereafter set in boisterous weather, wet and inclement, varying with gales of violence from southeast and southwest until toward the middle of December; hard frost, followed by clear, bright skies and dry, intense cold, felt by night, set in, the thermometer down to zero in the open air, and at eight and nine degrees in a double-boarded hut, or twenty-five degrees below freezing point.

"These latter atmospheric conditions—and singularly healthy they were found—continued until the earlier part of January, when heavy falls of snow took place; then followed a winter of frequent variations of snow, thaws, and frost, and a great prevalence throughout of harsh and violent winds from the northeast and southwest, until a well-advanced period of spring, and altogether a great exemption from excess or duration of humidity, a most favoring circumstance toward the preservation of the excellent health the army had acquired, and which appeared almost proof against the many abrupt and extreme changes to which the Crimea, from the mountainous character of the southern region and its peninsular form of prominence on the Black Sea, is subject to.

"Early in April, 1856, spring established itself in extremely fine weather; May also proved a very fine month, light westerly and northwesterly winds prevailing; occasionally, however, subject to the humid atmosphere of low-spreading clouds—the phenomenon familiarly denominated the Black Sea fog, from its density and low stratum; a clear sky often showing immediately over it. Toward the latter part of May the temperature began rapidly to increase, and attained a maximum of 80° in a double-boarded hut at Kamara; the nights, however, being ever cool, and equally so from this period until the departure of the army; a month later the climate was most congenial to the health of the troops, the thermometer showing no wide oscillations, or a medium of temperature in the camp huts greater than 75°; light winds from westerly points were the most prevalent at this season, and were attended with occasional showers of refreshing rain."

Under the head of *Mortality* we find noticed its course in the army in general, the monthly proportions to the total mortality during the war; its course in the several arms of the service; in the several divisions of the army, and in regiments of infantry which joined the army after it arrived in the Crimea; and finally, among the officers of the army during the war. Tabular statements and diagrams elucidate these several topics.

The relatively small proportion of deaths from wounds in battle to those which are caused by different diseases, affords matter for serious study, and ought, on account of its moral aspects, to be universally known, as the best preventive, or, at any rate, refrigerant remedy against a war fever, which sometimes rages epidemically. It appears from a table, showing the number of men who died in each month from all causes, from wounds and from the principal classes of disease, that the mortality from wounds alone and mechanical injuries, from April, 1854, to June, 1856, was but 1761 out of 18,058, from all causes—diseases and wounds. The deaths from cholera were 4512;* from diseases of the bowels, 5950; from fever, 3446; from diseases of the lungs, 614; all other causes, 1745. The troops landed at different times in the Crimea amounted to nearly 48,000 (47,747) men of all arms. The entire number of admissions into the hospitals and hospital ships during the war was 162,673.

During the period the army was being assembled on the coasts of Turkey, viz., in the months of April, May, and June, 1854, the number of deaths which occurred among the troops amounted only to forty-one; and it appears that the mortality was limited exclusively to the infantry portion of the force. In July, cholera appeared in the camp, fever became more prevalent, and disease proved fatal in the proportion of 1·34 per cent. of strength in the infantry; 1·25 per cent. in the ordnance, and 1·13 per cent. in the cavalry; and while cholera proved most destructive in the infantry and cavalry, fever was the more mortal in the ordnance than in the other two branches of the service.

Fluctuations in the degree of mortality of the different branches of the service are noted. The predominance of mortality in the ordnance department, in August and September, was owing to fever, the result, doubtless, of residence in the filthy neighborhood of Varna and the exposure to the sun in the performance of heavy fatigue duties. In October the higher proportion of mortality, or 2·76 per cent. of the strength, was in the cavalry, and was caused by fever and cholera. The following exhibits the nature of the causes of disease and death which press most heavily on a besieging army in an inclement season, when deprived of the means of keeping up bodily vigor by appropriate food and protection against atmospherical extremes and vicissitudes:—

"In November, the measure on which the peculiar hardships of the siege began to bear on the several branches of the service, was first clearly indicated in the relative mortality which occurred; during the month of

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* The author of the Report whose classification we follow, does not, it will be seen, recognize cholera among bowel diseases, or as a disease of the alimentary canal.

August, the proportion of deaths was greater in the cavalry and ordnance than in the infantry; and in September, the mortality in the ordnance was in excess of that of the infantry; while, in October, the ratio of casualties in the cavalry predominated over that in the infantry; and the difference of result was determined, not alone by the prevalence which cholera obtained, but by the extent to which 'fatigue duties,' exposure to the sun, and the special influence of locality, proved detrimental, in increasing the mortality of affections of the bowels, and particularly of fever; but in this month the number of deaths in the infantry represented 3·41 per cent., and in the cavalry and ordnance 1·68 and 2·26 per cent., and while a large proportion of the loss sustained by the infantry was the result of cholera, which assailed the regiments and drafts which arrived as reinforcements to that portion of the army, it was in part, also, caused by the more fatal character which the fluxes had began to assume among the infantry troops, as a consequence of the increasing labors and difficulties of the siege."

The next month bore evidence of the disproportional degree in which the rigors of the climate, the privations and the hardships of the service, were pressing on the different arms of the service; for whereas the number of deaths from diarrhœa and dysentery represented only 1·49 per cent. in the cavalry, and 2·01 in the ordnance, it amounted in the infantry to 2·90 per cent. of strength.

Still stronger was the evidence furnished of the force of the exposures to which the infantry, more than either of the other arms of the service, was subjected, and of the resulting mortality.

"In January, (1855,) the number of deaths exceeded that of any other month during the war, not only in the army but in the several arms of the service; yet the extraordinary mortality which the troops now sustained was almost entirely independent of cholera, (for that pestilence, after inflicting for many months great losses on the army, had at length nearly quite disappeared from the camp,) and was all but exclusively the result of the conditions of the service, as expressed in exposure, night-watching, duty, diet, accommodation in tents, bedding, etc., and the measure in which these conditions affected injuriously the different portions of the army, is explained in the statement, that the loss incurred by the infantry during the month amounted to 10·46 per cent. of strength; in the ordnance to 5·24 per cent., and in the cavalry to 3·95 per cent.; and that the total deaths from the fluxes alone represented in the infantry 6·98 per cent.; in the ordnance 3·82 per cent., and in the cavalry 2·23 per cent. of strength."

During a period which elapsed from the beginning of the winter in November, 1854, to the end of February, 1855, the proportion of deaths in the ordnance was considerably in excess of that in the cavalry, and in the infantry it was nearly twice as great as that in the ordnance.

In the month of April the diminution in the mortality was not only conspicuous in the army generally, but was almost equally so in every portion of it. Its increase, again, in the two months following, was owing to cholera, which reached its highest degree of epidemic violence in June. A decline in July was followed by an augmentation of deaths in August, a result attributable to cholera. In September, October, and November, the sanitary condition of the army was improved; but in December the mortality again rose.

The regiments of infantry which joined the army after it arrived in the Crimea, suffered greatly from disease, and the consequent mortality was excessive. One regiment, the 46th, which landed on the 8th of November, 1854, lost 533 men from disease alone, or the unparalleled proportion of 105·7 per cent. of mean monthly strength, and 36·6 per cent. of the total strength. The diseases which proved so largely destructive in all these regiments were cholera and diseases of the bowels. Of the whole number of deaths returned in the 46th regiment, 156 were caused by cholera, and 249 by fluxes, while 74 deaths were the result of fever, and 11 were assigned to diseases of the pulmonary organs. Part of the excessive mortality in the newly-arrived regiments was due to the abrupt manner in which these corps were introduced to the labors, hardships, and exposure of the siege. To these regiments, and the drafts which arrived about the same time, the reporter "would especially point for an illustration of the appalling ravages, which the direct action of the choleraic poison on men predisposed, and the severe application of the proper causes of the fluxes, were capable of producing in the ranks, independent of association (at least for a time) with scorbutic taint of the blood."

In reference to the mortality from disease among the officers of the army during the war, it was remarked that they suffered in less proportion than the private soldiers,—a fact corresponding with observations made in other parts of the world—East and West Indies, etc. The reasons for this difference in the Crimea were obvious enough, and are thus summed up by Dr. Marlow, (28th regiment.) "The extraordinary immunity of the officers from disease and death is extremely remarkable, and the circumstances, in my opinion, form the key to the explanation which may be offered of the almost unprecedented mortality among the men. It has been shown that the mortality in the former class amounted in the Third Division to little more than four per cent., while in the latter the mortality exceeded seventeen per cent.; and this will not be wondered at when it is remembered that the officers could nearly always command better food, clothing, and, in some respects, shelter at a time when the men were on short rations, with a very scanty supply of fuel, (for which they were indebted almost solely to their own exertions;) the officer was enabled either to procure fresh mutton, or fowls, or preserved meats, or soups, obtained from the ships at Balaklava; when the officer returned from the trenches, cold and drenched to the skin, he was certain to be provided with hot tea or coffee, and a tolerable supper, a change of clothes, and a reasonably warm bed; while the private, in many instances, had neither tea, coffee, nor supper of any description, but lay down in his wet, vermin-infected clothes, and equally moist blankets, in the mud, of which the floor of his leaky tent was composed. The duties of the soldier were infinitely more harassing than those of the officer, for the former, after returning from the trenches, was sent through the snow or mud to Balaklava for supplies of various kinds." This description is more particularly applicable to the state of things in the winter of 1854–55. By the time that the next winter had arrived, the condition of the army was every way improved, by the substitution of huts for tents, and the use of better clothing and more varied and nutritious food.

It appears from the estimates made on the subject of mortality from diseases in the army at different periods of life, that the very young and the old soldiers were the greatest sufferers. We learn from a diagram illustrating the mortality of six regiments for quinquennial periods of life, that the proportion of deaths in the first year of the war was greater between the ages of 16 and 20 than between 21 and 25; that it was greater between the ages of 21 and 25 than between 26 and 30; and that having reached its lowest point between 26 and 30, it increased slightly between 31 and 35 years, and then more rapidly; the greatest mortality having occurred above the age of 40. These conclusions would probably be modified by the previous period of service in the army. What, for example, would be the comparative chances of survivorship in two men aged forty, one of whom had served fifteen or twenty years, and the other who had just enlisted?

Bearing on this point are the remarks of Dr. Battersby in the section on "Invaliding in the Army on Account of Disease." It appears that the total number of men invalided in England amounted only to 9544. After alluding to the diseases under which the invalids chiefly suffered, Dr. Battersby, in reference to the relaxation of the rules for the examination of recruits, remarks:—

"Two classes of men were thus enlisted, of very different stamp, yet each inefficient; the first were growing young lads, from 16 to 19, the second, men supposed not to exceed 35 years of age; many of them, however, were nearer 50, and some beyond that age. But even at 35 a man is too far advanced in life to make a soldier.

"The consequences were soon manifest. These lads, exposed as they were to the hardships and privations of life, rapidly succumbed. Many died at the seat of war; many more were sent home after a few weeks' or months' service—some to die, others to be invalided. A good many, however, whose constitutions were not seriously impaired, joined their depots, and if allowed to attain maturity before they are again exposed or overworked, may yet become effective soldiers. As for the other class, men who had lost the elasticity of youth, and whose habits were already formed, they found the education and discipline of a soldier too irksome, and many of them feigned or exaggerated ailments, for the purpose of getting discharged. It was useless attempting to retain such men—they never could be made soldiers.

"The contrast between the old and young armies of the Crimea was very marked. The great majority of the first arrivals were fine men, in the prime of life, though sadly reduced by disease and privations. But how different were the invalids who arrived at a later date; some of them old and worn out, though of only a few months' service; others half grown, sickly-looking men, who should never have been enlisted; but they were more to be pitied than condemned for having undertaken duties, the nature of which they were ignorant of, and physically unable to perform."

We know not what degree of importance will be attached to experience of this nature by our government and the chiefs of the military department; but it is full of instruction as a matter of military hygiene, and as such is applicable to the army of any country, even though that country could promise itself the blessing of prolonged peace. No doubt a question of this nature was in a good measure solved by the American troops in their march to, and subsequent encampment in, Utah.

A full account of the several diseases under which the British army suffered during the war in the East is given in sections four, five, six, seven, eight, and nine of the second volume of the "History." Section third contains a "General Sketch of the Course of Disease," and section tenth is on "Mortality" among the troops. It will be seen that in our preceding remarks and digested summaries, we have not followed the order of sequence laid down in the volumes before us, but have grouped subjects as seemed to us most convenient. In the too limited space which remains for us, we shall make our dottings in the line pursued by the reporter, Dr. Hanbury. We are told that nearly all the diseases by which the army was afflicted during the late war were of a kind more or less incidental to troops employed on active service in the field, and familiar to the conditions of camp life. From time immemorial fevers and fluxes have represented the diseases of armies and of campaigns, and their occurrence in the present instance was merely remarkable for the amazing prevalence and mortality which, for a considerable period, they obtained.

Cholera.—In reference to *cholera,* it is remarked that hitherto its appearance had been entirely an exceptional occurrence, the pestilence confining itself to small bodies of troops in camp or on the line of march, appearing only for short periods, and generally in detached positions, but seldom constituting itself an agent of wide-spread destruction. Now, however, we have to chronicle a disease which at an early date assailed the army, at first in Turkey, and afterwards in the Crimea, for a period of nearly two years, followed in its footsteps, and took up an almost permanent residence in the camp; at one time subsiding into comparative insignificance, and disappearing, to break forth again with redoubled fury and destruction. Looking at the history of cholera, and the late experience respecting this pestilence, there is reason to fear that it will assume a fixedness of endemic character in the different countries of Europe, similar to that which it holds in the various provinces of Asia, or more definitely of British India. A new element, the appearance and extent of which it will be difficult, if not impossible, to predict and measure, will thus be introduced in modifying the military results of a campaign. War will then become a game of much greater uncertainty than it has ever yet been, and victory will not necessarily incline to the side of the strong and the most skilled in strategy. Cholera presented itself on two occasions in the British army during the war, in an epidemic form; the first began in June, 1854, (in Turkey,) and for three months increased in prevalence, and then declined, subsiding slowly, and in an irregular manner, until the month of February, 1855, when it quite disappeared. The following month marks a clear interval between the two epidemics, for no case of the disease was recorded in the army in March, 1855.

In the history of the first of these two epidemics, details are furnished of the localities and spots in which the disease broke out, and of the order of succession in which it made its attacks on different bodies of troops. The disease was said to be imported into Bulgaria, and a plausible narrative of its introduction related by Colonel Neale, the British consul at Varna. The order of transmission is said to have occurred in the following manner: French troops from Avignon had the cholera among them when they embarked at Marseilles for Varna; some cases occurred on board during the voyage. At Varna, the disease "spread progressively through the town and allied forces, attacking the French and Turks simultaneously, and afterwards the English, no class of people, no description of locality, obtaining an exemption from it." On the other hand, we read, that when cholera was reported to have made its appearance in the French portion of the general hospital, which had been an old Turkish barrack, consisting of two quadrangles, additional means of segregation to those already practiced, were adopted, but in vain, for the protection of the English troops which occupied one of the quadrangles. The communication from the English quadrangle with the common passage had been boarded up, and a gate opened at the opposite or north side of the square. Notwithstanding all these precautions, a man was seized on the night of the 20th of July with the disease, on the ground floor, on the right-hand side of the entrance gate, the most distant point in the whole building from the French hospital, and he died in a few hours. The following day another man was attacked in the same ward, within three beds of the first case, and died in the afternoon. He had been eighteen days in the hospital, and was convalescent from fever. On the 9th of August, the disease in its most malignant form simultaneously appeared on board the "Britannia," "Albion," Trafalgar," "Tribune," and other vessels of war. Dr. Hall inclines to a belief in cholera having had its origin in local circumstances and peculiar atmospherical changes. Dr. Downes attributes the appearance of the disease among the French troops in the Piræus, (the harbor of Athens,) to importation by a French steamer. On this point it is worthy of remark, as attested by M. Baudens,* that, during the war, scarcely a week elapsed without persons with cholera having been brought to Constantinople by steam-vessels, and yet the disease did not prevail among the Mussulman population.

Diarrhœa, which preceded and accompanied cholera, was scarcely less exhausting and fatal than cholera itself. From the month of July, when the latter began, and during its entire epidemic course, diarrhœa prevailed; it affected the men of regiments in which cholera but slightly appeared, and there was scarcely a man who escaped an attack of this affection, while a vast proportion of the army was habitually affected by it; and no sooner were troops landed in the Crimea, than this complaint became almost universal among them. The effect was to reduce the physical stamina and vigor of the troops, and while lowering their standard of health, greatly, of course, to impair their efficiency. They were no longer able to undergo the same exertion, were fatigued by short marches; the men fell out of their ranks in great numbers; they could not in many instances carry their burdens, and their canteens and even blankets were thrown away.

The greatest sufferers from the choleraic poison were the regiments and troops newly arrived. This was observed in those which reached

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* Souvenirs d'une Mission Médicale a l'Armée d'Orient.

Sebastopol in the early part of the winter of 1854–55, as well as in those which landed during the prevalence of the second epidemic in 1855. It would seem to have been established as a rule marked with few exceptions, that from the unacclimated, the recently-arrived drafts, cholera selected its chief victims.

Consecutive Fever was a frequent sequela of cholera, and in many cases was followed by death. The ratio of mortality from cholera was very great; and, different from what has been generally observed in civil practice, the proportion of deaths to the number treated was as large after the pestilence had considerably subsided as in the earlier period of its outbreak. Some explanation is offered in the fact that in no case did the medical officers make returns under the head of cholera, unless the symptoms were well pronounced and pathognomonic of the disease. There was an outbreak of cholera at Scutari (near Constantinople) in the latter part of the year 1855, sudden and abrupt in its invasion, but extremely short-lived.

Etiology of Cholera.—A number of facts are introduced, which seem to show the influence of locality in the production and prevalence of this disease. To a great extent the *sanitary* character of a particular place was decided by the degree to which cholera extended in it, "for in disease the effects being known, nothing is easier than to predicate the causes." But, as the reporter justly observes, "those individuals who most dogmatically assert the cause after the event, are unable to predicate the effects with any near approach to accuracy from a consideration of ostensible causes, nor are they competent to explain why these fall short of, or exceed their estimate, or why they do not express themselves in the precise manner, and for the exact time which may have been anticipated." A strong lesson of caution in drawing conclusions as to predisposing causes is given in the following curious and instructive fact:—It seems, "that although the localities in which cholera broke out among the troops in Bulgaria appeared, in a sanitary point of view, extremely objectionable, although the character of the climate, the nature of the soldier's accommodation, duties, diet, etc. seemed to favor the extension of the pestilence, yet it prevailed to a greater degree in the 4th Division of infantry, which did not land in Bulgaria at all, than in any other portion of the army; further, the disease thus assailed the 4th Division in a more severe form, not alone while the troops were on board ship, but as it marched side by side with the other divisions of the army from 'Old Fort' to the heights before Sebastopol." It was observed, however, in confirmation of that view which exhibits cholera as dependent on atmospherical conditions, that in the attack at Scutari, "as well as in every other instance which occurred, the outbreak of the disease seems to have been with changes from dry weather to a humid state of the atmosphere."

Little need be said of the treatment of cholera in the different corps assailed by the disease, for nothing encouraging, on this head, is added to our existing knowledge in the work before us. Of the deaths from cholera, it is said in the report that they amounted to 4513 during the war; and that the mortality from all other diseases (exclusive of wounds and mechanical injuries) was 11,785. The proportion, therefore, which the deaths from cholera bear to those of all other diseases, was 38·2 per cent., or more than one-third. Of this mortality there occurred 2903 deaths in the first epidemic, and 1610 in the second epidemic.

Diseases of the Bowels obtained a degree of prevalence for eighteen months, during the Crimean war, unknown in British military annals, "and for one-third of that period presented themselves in an aspect more fatal than has ever before been recorded. And while the causes to which the great extension of the disease may be considered as mainly represented—first, by an epidemic or choleraic constitution of the air and exposure of the unseasoned soldier to the endemic agencies of a hot climate, in the summer and autumnal months; and second, by the hardships, privations, and sufferings of a winter siege, carried on in an inhospitable climate, those of its mortality were chiefly confined to the latter—the hardships, etc. of the siege, at such a season." Bowel affections, at first in Bulgaria, and afterwards in the Crimea, prevailed almost entirely in connection with cholera; but in the last two months of 1854, and the first of 1855, "the circumstances of the soldier's life, the nature of the service, and the severity of the climate, were pre-eminently calculated to induce this class of diseases, and the effects were disastrous beyond all example, and resemble more the accident of fate than the adopted result of self-imposed position." It may be asserted that the army, at least the infantry force, represented a stricken mass. There was, indeed, scarcely a sound man in the ranks, with the exception of a small number recently arrived in the country. The number admitted represented the capacity of the hospitals rather than the necessities of the time, for, in fact, the men in the trenches, and daily proceeding on fatigue duty to Balaklava, were, in a great proportion, suitable candidates for admission into the hospitals. A lesson of etiology, and of treatment of these diseases, and also of patriotism, is furnished in the following sentence. The reporter had just been speaking of the sympathy of the British public having been for a time frustrated, in its anxiety to discover some specific cause, some panacea for the wide-spread suffering in the ranks of the British soldiers. Fully convinced were the medical officers, "that there was nothing recondite or mysterious in the causes of the frightful losses which were being daily incurred; and the result more than justified their conclusions; for when at length the gushing sympathies of the people found a proper channel for their expression, and the supplies of clothing, bedding, and food, so largely provided by the government, reached the army, the soldier forthwith, under the fostering care of the nation, (of which there is not on record a greater or more noble instance,) advanced to a state of high efficiency, and in a few months reached a standard of health which it was the more delightful to contemplate, as it was so unusual, and, *in general*, so totally unexpected."

In the month of February, the diminution of disease corresponded with the amelioration in the severity of the season, abundance of personal clothing, and better accommodation in tents and bedding, food of somewhat better quality, and regularly cooked. The number of admissions, which in January was 5436, was, in this month, reduced to 2336; and in the month of March it became evident that these deadly fluxes had nearly ended. The total number of cases of bowel diseases treated in hospitals during the war was 55,765, or 34·2 per cent. of the whole number of cases admitted from disease during this time.

Diarrhœa.—To diarrhœa, associated with cholera, is to be referred one-fourth of all the casualties which occurred from wounds and sickness during the war. The deteriorating and destructive influence of this combination on the health and military efficiency of the troops has been described in a preceding page. Diarrhœa, dependent on endemic causes—great heat by day, coolness and heavy dews at night, lying on or near the damp ground, the use of unwholesome spirits, improper food, including unripe fruits and green succulent vegetables—spread very little in Bulgaria or the Crimea, and was, therefore, comparatively unimportant. Diarrhœa, the immediate result of hardships, exposure, and defective diet, could not be well studied, apart from its common association or blending with the choleraic variety; nor was it easy to say how far these causes would have been operative in common circumstances without the predisposing state of enfeebled constitution and scorbutic taint. We quote the following as suggestive of a pathology and treatment which a practitioner may find applicable to cases out of camp:—

"It was not unusual to see men affected with this '*congestive*' form of diarrhœa, who had only been a short time with the army, and it was the most severe description of the affection, and the most rapid and urgent in its symptoms, which occurred. It seemed proximately induced by the interruption of the cutaneous and biliary functions, and congestion of the abdominal viscera and portal veins; and while it was almost instantly relieved by rest and warmth, it was extremely apt (the exciting causes being continued) to merge into dysentery, and the dysentery thus originating was prone to pass on to more rapid disorganization than when otherwise induced."

Next in importance to the inculcation of a few physiological truths, as a foundation for hygienic practices, ought to be that of the importance of rest and warmth in the forming stage or inception of all the forms of congestive disease, including not only those now under consideration, but also cholera, fevers, and typhoid pneumonia. A timely yielding to the threatened storm will not only prevent much future racking, but also entire uprooting and destruction.

Scorbutic Diarrhœa.—In the report before us, diarrhœa is examined in its relation to the operation of causes still more complicated, and the state of the system which these causes determined. Concurrently with the immediately injurious effects of agencies already enumerated, there were caused by these latter a reduction of the system, an impairing of the functions, a vitiation of the blood, and a lowering of vitality. "Diarrhœa occurring in the pathological state of the system thus induced, presented important modifications, which were determined rather by such state than by any of the individual causes now mentioned, or any combination of them, and it was of course chiefly remarked in men who experienced great hardships, privations, and sufferings for a considerable period. In this form of the affection, the patient presented himself in a feeble, emaciated state, having previously suffered from occasional attacks of diarrhœa, and perhaps from other complaints. There was loss of appetite, loathing of food, apathy of mind, debility or disinclination for exertion; the pulse was small, slow, and feeble; the skin was dry and rough, often of a dusky, muddy-brown color; that of the abdomen was retracted, covered with dry, hard scales; the features assumed a wan and listless expression; the face and eyelids were œdematous; the mucous membrane of the mouth and lips became exsanguined, the legs and feet were generally swollen, and there was felt in them a sense of numbness and coldness. The tongue appeared large and flabby, or was covered with a slimy mucus, and it was often indented by the teeth. The dejections were voided frequently, and sometimes with a degree of straining and pain; they were occasionally serous and watery. Sometimes they were of a clay color, or grayish, and extremely fetid, but these last characters usually occurred in the worst cases, and those attended with organic lesions. The appearance of bile in the dejections was not constant, and it seemed rather to be periodically thrown off as an excretion, than to be expurged as an *element* which had been applied in the digestive process; it was seldom observed of a depraved quality in the evacuations, except in the complication of a low adynamic fever, which was by no means an infrequent occurrence. Notwithstanding the grave nature of the symptoms here detailed, diarrhœa was yet, under careful treatment, and with suitable resources, still a very unmanageable disease." The scorbutic nature of the affection was evinced by livid and swollen gums, and their bleeding on slight pressure; petechial spots and ulcers on the legs; patches of ecchymosis on the calves of the legs; listlessness; dyspnœa, on slight exertion; a feeling of aching pains in the limbs, with a sense of coldness; œdema of the feet, and sudden hemorrhage from the bowels; vomiting of blood, discharge of blood from the fauces, epistaxis, etc.; and occasionally the scorbutic nature of the disease was still further shown by fatal sinking, and effusions into the pericardium or pleuræ. The low vitality with which diarrhœa under these circumstances was associated was often illustrated by the occurrence of frost-bite. Of the treatment of diarrhœa nothing new or positive is said in the report, nor is confidence expressed in the result of any mode of medication adopted.

Dysentery is declared to be "*primarily*" a disease of tropical climates and of cold latitudes; and it is added, that its prevalence in both is determined, in a great measure, by the evidence of the locality and nature of the season, and that the *conditions of life* which favor its development and extension in the soldier, are represented in the nature of the clothing and bedding, the amount of exposure and fatigue, and the character of the food with which he is provided. This disease is undoubtedly, also, observed as an effect of special causes, bad water or other agencies, the nature of which it is often not easy to appreciate; and troops have suffered from the complaint when its appearance could scarcely be assigned to anything more definite and tangible than the state of the atmosphere. That dysentery should easily be developed under the circumstances of a soldier's life is easily understood.

Dysentery attracted but slight notice while the army was in Bulgaria, (in the summer of 1854,) and made little progress before Sebastopol, until the month of November, between which time and the end of January it continued to be extremely prevalent and fatal. We are told that "the prevalence and mortality of dysentery, from the date the army landed on the Crimea until the end of February or March, from month to month, almost accurately represents the increase, culmination, and decline of the wants of the service—of the sufferings of the soldier; with these they move in a parallel course, for in proportion as they were present so did they constitute the cause of the disease, and the influence of the climate in increasing or diminishing the effect was probably nearly commensurate with its influence in increasing and mitigating the hardships and sufferings of the troops." The progress of the disease in the army from the month of May, 1855, was perceptibly advanced under the influence of change of season. The highest number of admissions into the hospitals, viz., 817, was reached in July; in August and September, the number of cases treated amounted to 621 and 564; but from the end of this latter month dysentery ceased to be a disease of importance. The progress of the complaint was much less certain and definite than when it arises from causes less numerous and complicated. We have not room for a detail of the symptoms of camp dysentery, which was generally preceded by diarrhœa. The most certain signs of danger were a peculiar aspect of the countenance, which it is difficult to describe, but is yet known to attend upon certain stages of intestinal lesions, pungent local heat of the abdomen, generally of the hypogastric region, and fetid and unnatural character of the evacuations. In the early stage of asthenic dysentery, that which almost invariably prevailed in the Crimea, there was very little change of the pulse, or symptomatic fever; but when the disease extended beyond the inner or mucous membrane, and disorganization had begun, the pulse became small, quick, and concentrated. If the skin were dry and hot, and partial sweats appeared occasionally on the head and chest, the extremities or feet became cold, the sufferer was in imminent danger. Dysentery was frequently associated with fever of a low or putrid type, which interrupted the course of the disease and altered its symptomatology. The presence of scorbutic complication with dysentery was indicated by the symptoms proper to scurvy. The state thus induced was one of peculiar obstinacy, and rendered its subjects very liable to relapse. The greater tendency to frost-bite in dysentery was as well marked as it was in diarrhœa. We shall reserve what may be said of the *post-mortem* appearances in these bowel affections for another time, when we can analyze the "Report on the Pathology of the Diseases of the Army in the East." The treatment of dysentery may be dismissed in a few words. It was, "of necessity, extremely defective." The first step was to restore, as much as possible, the patient to the ordinary conditions of life from which he had been removed. With this view, the requirements of rest, warmth, cleanliness, free ventilation, sufficient cubic space, and a varied nutritious diet, formed the chief indications to be attended to. The most valuable remedy, in general estimation, was opium; but it had to be used with caution, "for if pushed too far it lowered the circulation and predisposed to gangrene in the parts most distant from the heart." Lime-juice was found to be very serviceable in those cases in which dejections of indigested food were observed, and also where the bowel affection was associated with scorbutic taint of the system. The dose was from one to three ounces, with sugar and water, two or three times a day.

The mortality from diseases of the bowels in the British army was mainly dependent on the particular circumstances of exposure, want, and fatigue. Climate, *per se*, had little to do with it. Thus it is related that of the whole number of deaths returned, viz., 5950—5301, or 89·0 per cent., occurred from the period which elapsed between the opening of the siege of Sebastopol, on October first, 1854, and the termination of the following April; while in the months of December, January, and February, taken together, 4145 deaths occurred; and in January alone, 2033, the latter, in itself, constituting a mortality considerably greater than was incurred by wounds during the war.

Fever.—Our waning space reminds us of the necessity of passing, without delay, to a consideration of fever under the interesting aspects in which it presented itself in the British army, at first in Bulgaria, and afterwards in the Crimea, and which are described in the "History." Climate, season, and localities, imperfect protection from atmospherical extremes and vicissitudes in bell tents, without a bedstead, and entire want of ventilation, added to harassing field-day duties, were all causes which are recognized as equal to the production of fever among the troops who were thus exposed. The final result was not only considerable mortality in Bulgaria, but ineffectiveness of a large portion of the army. When, late in the season, the troops left Turkey and arrived in the Crimea, the fever rapidly subsided until the end of November—a change not to be explained by the nature of the duties of camp life, which, at first in marches to Sebastopol, and then in the fatigued exposure during the first period of the siege, were more arduous and exhausting than ever. The relief was due mainly to the beneficial influence of the removal of the troops from an ungenial climate and insalubrious position during an unhealthy season of the year. Remittent and continued fevers were the most prominent of those which appeared in Bulgaria, both on account of the numbers presented and the exceedingly severe nature of many of the cases, and the formidable symptoms which arose during their progress. These fevers were all of the asthenic form, and presented almost invariably a disposition to local complications. There were determinations either to the head or to the abdominal viscera, and occasionally to both. Deranged secretion of the liver was very common, which showed itself in hyper-secretion of bile; gastro-enteric symptoms were still more usual, even when the discharges from the bowels did not indicate deranged hepatic function. The remissions in fevers of the remittent type were often very imperfect and irregular, and sometimes it was lost and merged in the continued form. Seldom were the "solid viscera" seriously compromised, whether the fever assumed the intermittent, the remittent, or the adynamic form. In scarcely an instance was the spleen affected, and the change in the liver seldom went beyond congestion. There seemed to be no definite period of duration of the disease. Emphatic testimony is borne to the efficiency of prophylaxis, by a removal of three Divisions of the army from the filthy neighborhood of Varna and the marshy grounds near the Devna Lake to the plateau on which Monastir stands, and to the heights near the village of Govrekoi, and the elevated ground in the Adrianople road south of Galata Point.

After presenting the principal features which characterized fever in the army of the Crimea, from September, 1854, to the end of the following April, the reporter makes the following remarks: "At first of an unimportant character, induced by exposure to atmospheric changes and other ordinary agencies, it generally assumed a mild form, marked by bilious and gastric derangement, and complicated with diarrhœa. At a later period, in December and January, the great hardships of the service, cold and wet, constant night-watching, insufficient clothing and bedding, and food of defective composition, rendered dysentery a prevalent and destructive disease, and we find that fever was often superinduced upon it, and frequently succeeded by it; and lastly, fever occurred as a consequence of a period of hardship, exposure, and privations, became epidemic, acquired contagious properties, presented the form of remittent typhus of camps, and periods of famine and distress, and was distinguished by moderate disposition to relapses." The fever was not accompanied by disorganizations of the solid parenchymatous viscera, as the liver or the spleen, and dropsy was not often observed. Convalescence in the last four months of the existence of the fever was extremely protracted and unsatisfactory, and the tendency to relapse great. Relapses were referred to three causes: 1. A vitiated state of the blood, and a low, depraved, cachectic condition, induced by long-continued hardships and privations. 2. A residence in the vitiated air of hospitals, the tainted atmosphere of overcrowded tents, which introduced morbific elements into the circulation. 3. Organic changes of a complicated kind in the small and large intestines. It is most probable, however, that these lesions themselves were but an evidence of a morbid state of the system. The really contagious character of the fever is not so clear, if we are to adopt the view entertained on this subject by Dr. Crawford, who, in his report, while asserting that the fever is unquestionably contagious, adds: "But a residence in the same atmosphere with patients suffering from it seems necessary for the production of the disease in a healthy individual in this way." This would show the fever to be infectious, the product of a contaminated air, as there is every reason to believe that yellow fever is, but not communicable from person to person, as is the case with a fever truly contagious. The distinction is an important one, and its disregard has led to much confusion and misapprehension, to needless panic, and cruel neglect of those attacked with fever. If we ventilate thoroughly the wards of a fever hospital, we may smile at the idea of contagion in its wards or of farther propagation of the disease from them. Alter the conditions of the soil in yellow-fever regions, and this dreaded pestilence will disappear for want of those emanations which, in conjunction with a high temperature, give rise to it.

In the Report before us we read: "The disposition of fever to extend itself was not observed among troops whose physical stamina had not been much reduced—as the cavalry and the artillery—and was much greater in large than in small hospitals, and was especially manifest in some localities; but when it was observed in a regiment, recruits were liable to contract fever."

Among the prophylactic, and at the same time curative measures recommended by the medical staff, one was found to be quite efficacious. It consisted in the provision of a certain number of steamers suitable for the reception of the sick, and transferring the latter in a regular and systematic manner to the various hospitals of the Bosphorus. A second measure was the opening of the general hospital near the old Genoese Castle, overlooking the entrance into the harbor of Balaklava. We find but little said of the morbid lesions to illustrate the pathology of the fever of the Crimean war; but we shall reserve at any rate what is procurable under this head for another occasion, when greater justice can be done to the subject.

The treatment of this fever consisted mainly, in the first instance, in ventilation and cleanliness, by which means, if due attention were early paid, the disease was prevented from running into a low, putrid, and adynamic type. Rest and warmth were also necessary here, as they were found to be in bowel affections. No curative measures were of greater importance than the selection of suiable diet. "In the more severe cases, arrow-root, milk, essence of beef much diluted, and weak lemonade were most generally prescribed, and wine was often administered to the extent of six or eight ounces, while brandy was occasionally found necessary in considerable quantity; but in cases less grave, the diet was still more liberal, and comprised the use of animal and vegetable broths, and during convalescence beer was found extremely useful. Milk, as a remedy to check vomiting, which was very frequently an extremely obstinate symptom, proved more effectual than any other article of food and than any of the numerous medicines which were administered for this purpose." But, in order to derive full benefit from a suitable diet in the treatment of fever, it was necessary that the articles specified should be taken in the smallest quantities. The treatment of fever here laid down is not that of the schools, nor is it one which will be called for in ordinary private practice; but if it suggest an imitation even in single cases where constitution, exposure, and defective food have assimilated our patient to the soldier, it cannot fail to do good. In hospital practice in civil life, we not unfrequently find wretched creatures, exhausted by age, intemperance, and defective nutrition, who require to be treated in a manner very analogous to that which was ascertained to be most successful in the troops before Sebastopol. Medicines, of whatever kind, and in whatever mode of combination, it is justly remarked in the report, were entirely subordinate to the means above indicated. "A mild emetic was sometimes prescribed in the early stages, and an alterative of gray powder and ipecacuanha given and repeated with advantage; but in the progress of the symptoms, stimulants, diaphoretics, and the whole class of cardiac remedies were considered most necessary. Among these may be mentioned a mixture of aromatic spirit of ammonia and sweet spirit of nitre with camphor. The constant occurrence of vomiting, or hiccough, demanded the use of hydrocyanic acid, chloroform, morphia, and effervescent draughts; further, diarrhœa being an extremely obstinate complication, occurring at intervals, required to be checked by the use of opium and astringents." Considerable management was, however, necessary in the extent to which these remedies were used, for a sudden check of the diarrhœa was often followed by aggravation of the fever. Congestion of the lungs, and low typhoid pneumonia, which were so constantly observed, were combated by the application to the chest of blisters, sinapisms, and stimulating liniments; while blisters and irritant ointments were often applied to the neck and parts of the scalp, when the brain became involved in the course of the disease. Great caution was necessary in the use of these external applications, owing to the low state of vitality and the depraved state of the blood, so that blistered surfaces sometimes healed slowly, and sloughing, which it was difficult to arrest, occasionally occurred.

The mortality from fever during the war was 3446, and the admissions into the hospitals for the same period amounted to 31,204, the former being to the latter in the ratio of 11 per cent., and representing 19 per cent. of the mortality from all causes during the war.

Scurvy, associated in the minds of both the professional and general reader with sea life, and restriction for a long period to salt provisions, figures somewhat largely in the medical histories of military life, where the troops have been confined within narrow limits, either as besiegers or besieged, exposed to cold and moisture, and deprived of a due supply of fresh wholesome food and vegetables. In the section on this disease we read the following, which in a short compass conveys a clear idea of the extent to which the scorbutic diathesis prevailed in the British army, and the coloring which it gave to the current diseases:—

"From the details now submitted, it will be understood that scurvy was an affection of some importance, at one period, in the army. It is to be understood, however, that the returns convey but a very faint conception of the disastrous part which it acted among the troops; for, although it was only in comparatively rare instances that it presented itself in well-defined forms, and as an independent affection, yet the prevalence of scorbutic taint was wide-spread, and in a vast proportion of cases evident indications of it existed as a complication of other diseases—fever and affections of the bowels. Indeed, it may be stated that during the first six months of the siege, all morbid ailings in the older residents were more or less distinctly marked by scorbutic symptoms; and the fact is constantly commented on by medical officers. Thus Dr. Marlow, 28th Regiment, remarks: 'Although there are apparently few cases of pure scurvy marked in the return, nearly every admission into the hospital exhibited unequivocal signs of the scorbutic taint.'" Many of the characteristic features of scurvy have been already enumerated in speaking of the complication of this disease with bowel complaints. One of the most constant precursory symptoms of scurvy was an obscure form of muscular rheumatism; the individual complained of pains in his legs of an aching character, and his movements were tedious and painful; but in no case was there articular inflammation. This disease, as would appear from M. Baudens,* occurred to a greater extent and assumed still more serious characters in the French army, during the autumn and winter of 1855–56, than it did in the English army during the preceding year; and the facts prove irresistibly that certain conditions of life, defective nutritious diet, imperfect shelter and accommodation, over-crowding, and filth, as distinct from excessive labor and fatigue, were the essential causes of this disease, and of the fatal epidemic of fever which succeeded it.

The measures of a prophylactic nature recommended in an urgent manner by the medical officers of the army were little heeded, or we ought rather to say, could not be carried out by those in command, owing to the negligence and blundering in the commissariat department. For a long time after a supply of vegetables had arrived at Balaklava from England, the utter want of means of transport prevented them from reaching the troops, who were in sight of what was destined for them. "The treatment was to a great extent expressed in the use of vegetables, lime-juice, milk, fresh and preserved meats, soups, bread, wine, and beer; the use, in short, of a varied and nutritious diet." It is important to notice that preserved meats, soups, and vegetables were deemed nearly as valuable as these articles in their fresh state. The preparation of preserved or pressed vegetables which gave the greatest satisfaction, were those made of "mixed" vegetables, prepared according to the French method, and known as "Morel's." It may be added that preserved potatoes, whether in the shape of dry crumbs, or shreds like maccaroni, were not only much relished by the sick, but were considered extremely valuable in scorbutic affections. Some difference of opinion occurred regarding the value of lime-juice as a remedy in scurvy. We cannot, however, fail to appreciate its usefulness in assimilating salt meat and biscuit, the common food of the soldier at this time, and thus removing, physiologically, a potent cause of fluxes. There follows, under the head of "Concluding Remarks," some instructive suggestions on the victualing of troops in the field.

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* Op. cit.

The section given to *Frost-bite and Gangrene* conveys very valuable information, by presenting what at first would seem to be a merely incidental casualty as a formidable variety of disease, affecting a large number of men. The total number of cases noted in the returns is 2390, and of these, 1924 occurred in the first winter, 1854–55, and 474 in the second. The total number of deaths was 463, and all occurred, with the exception of six, in the first winter of the siege. "It was not noticed that a low range of temperature exclusively determined the existence of this affection. On the contrary, it was observed that many cases occurred as a direct consequence of exposure to wet, and more especially when it was accompanied by winds from the northeast. Further, frost-bite very frequently occurred during periods of thaw; but, above all, was it a common event of a thaw by day alternated with frost at night, for on this state of the weather the clothes of the soldier were at once saturated with wet, and again stiffened into ice." The circumstances which rendered the action of cold so unusually severe, were the duties which devolved upon the men, the inadequate nature of their clothing, and the miserable accommodations in tents and bedding. Bearing these things in mind, we can better appreciate the view which has been taken on this subject by Dr. Dumbreck, who says: "I consider that many of the cases denominated *gelatio*, were in reality gangrene from debility; many of the men having been attacked when the thermometer was between 40° and 50° Fahrenheit." We shall probably take the most correct view in regarding the disease as the compound effect of cold and a reduced state of the system—the gangrene of cold and debility.

Diseases of the Organs of Respiration, as they were met in the British army, form the subject of section ninth of the medical history of the war. Contrary to what might have been anticipated, this class of diseases was met with to only a trifling extent. The "whole number of cases treated during the war amounted to 12,382, and of deaths to 644, representing 7·6 per cent. of the total admissions, and 3·9 per cent. of the mortality from all diseases; and when it is considered that under this class of affections are included nine diseases of very common occurrence in the ordinary circumstances of life, it will be at once understood how comparatively insignificant was the part it acted among the troops." The total number of cases assigned to *pneumonia* was 590, of which number 161 proved fatal; 159 of these cases were admitted in the first winter and spring, between November, 1854, and April, 1855, of which 79 were fatal; and 257 were admitted in the following winter and spring, of which 45 were attended with fatal issue; the remainder of the admissions, 208, and of the deaths, 39, were distributed over the summer and autumn months of 1854 and 1855, 39 cases, however, having been admitted in May and June, 1856, of which five terminated fatally. There was a very noticeable difference in the proportionate mortality in the two winters, that in the first being 63·1 per cent., and in the second 16·7 per cent. of the number admitted. The form which this disease assumed in the army was almost invariably of the low asthenic kind, with extreme tendency to pass rapidly into typhoid states; and blood-letting or other depletion was, therefore, seldom resorted to in the treatment. A common association of pneumonia was with affections of the bowels and fever in very reduced states of the system, and hence a lack of any decided or well-marked indications of the true character of the disease, so that a slight cough and hurried respiration were sometimes the only discoverable circumstances. Sometimes pneumonia was secondary, occurring in the worst stages of bowel complaints and of fevers, in which it was the immediate cause of the fatal issue. The *post-mortem* lesions will engage our attention at another time, when the subject of the pathology of the diseases of the army in the East comes up formally for notice and consideration.

Phthisis Pulmonalis was of rare occurrence, and the whole number of cases, during a period of twenty-six months, did not exceed 185, notwithstanding the large number of boys in the army, and the known predominance of diseases of the pulmonary organs among Englishmen in early life. Many medical officers believed that the habit of living in the open air, under canvas, brought with it a tolerance in the soldier of those atmospheric changes which are so productive of derangement and disease of the pulmonary organs. "In truth, it may be asserted that diseases of the lungs are rather the *heritage* of civilized life, and of *artificial* training, while the fluxes are the more appropriate effects of those *nomadic* and *primitive* states of existence, the requirements of which are fulfilled in the shelter of the tent, or of rude arbors constructed of reeds or the branches of trees."

Catarrh, Acute or Chronic, furnished 10,083 cases, of which 240 proved fatal. Of the entire number, 9506 were referred to the acute, and 577 to the chronic form. The mortality in the months of December, 1854, and of January, February, and March, 1855, was 183, or 76·2 per cent., while only 12 fatal cases were recorded in the same months of the following year.

Bronchitis presented itself with less frequency than catarrh, but more so than the other affections of the lungs; the total number of cases received under treatment having been 1111. Although it acquired nearly an equal degree of extension, regard being had to the strength of the army in the early part of the siege, and in the winter and spring of the following year, its mortality was almost exclusively exhibited in the winter and spring of 1854–55. Bronchitis proved to be not only a very fatal disease at this season, in the few instances which were returned, but very frequently it occurred as a grave complication in the more serious cases of fever, and was the immediate cause of the fatal issue. The symptoms were insidious, both in their commencement and progress, and manifested great want of power. Accordingly, constant watching and frequent examination, with a view to detect the earliest evidences of the graver symptoms of the affection, and the employment of blisters and other suitable remedies, from the moment serious internal mischief was threatened, were essential conditions for its successful treatment.

Dr. Hanbury, Staff Surgeon, author of the History of Diseases as they occurred in the British army during the war, has acquitted himself of his task in a most satisfactory manner. It has been our sole aim to place before our readers a condensed sketch of the details and descriptions introduced by him, as well as of the conclusions at which he arrived, after a wide and patient survey of the whole field of operations. Seldom will there be found so large a body of medical history, and especially of etiology and clinical medicine, and of preventive hygiene, with so little speculation and hypothesis. This excellent feature of the work has rendered, however, the labor of analysis and condensation more difficult than under the ordinary circumstances of composition. The amount of tabular matter is great, and would of itself constitute a work of valuable reference.

Respecting the successful issue of the trade and game of war, it is justly remarked by Dr. Hanbury, in the closing paragraph of the "History," that, as carried on according to the enlightened notions of humanity which distinguishes modern civilization, war has, in truth, become in a great degree a problem of sanitary science; and the greatest genius for command in battle may issue in less successful enterprise than the sagacious and provident arrangement which would provide for the continued preservation of the soldier in health and efficiency. It follows that every officer, taking a more extended view than heretofore of his duties, must feel the importance of a general knowledge of the causes affecting the health of his men, and of the measures most effective for preserving them in a proper state of physical vigor.

ART. II.—*A Treatise on the Pathology of the Urine; including a complete Guide to its Analysis.* By J. L. W. THUDICHUM, M.D., late Physician to the St. Pancras Royal Dispensary; Lecturer on Chemistry at the Grosvenor Place School of Medicine; with seven Plates. 8vo., pp. 430. London: John Churchill. 1848.

Urinary Deposits; their Diagnosis, Pathology, and Therapeutical Indications. By GOLDING BIRD, M.D., F.R.S. Edited by EDMUND LLOYD BIRKETT, M.D., Caius College, Cantab.; Fellow of the Royal College of Physicians; Physician to the City of London Hospital for Diseases of the Chest, etc. A new American from the fifth London Edition. 8vo., pp. 382. Philadelphia: Blanchard & Lea. 1859.

UNDER the above title Dr. Thudichum has added another contribution to urilogical science. The work is a large octavo, very handsomely illustrated. The manner in which it will be received will, no doubt, depend upon the wants of the reader. He who takes it up with the expectation of finding a treatise in full upon the pathology and treatment of the alterations of the urine, will be very much disappointed. Again, if the reader be one looking for originality and much new matter, we fear he also may lay it aside; while those who are desirous of a work on the urine, rather more scientific than practical, well compiled by one fully conversant with his subject, will very likely give it a place in their library. Some original matter, it is true, we find scattered throughout the book, but the impress is that of a compilation of the knowledge of the day.

The physical characters of the urine are first discussed. Its various tints are described, and attention attracted to the series of hues which may be produced by the different degrees of concentration or dilution of the normal coloring matters of this fluid; and as it is difficult to obtain, from simple description, an accurate idea of the different shades of colors assumed, it would be well for those who are studying this subject to imitate the different tints by the method of Vogel, which Dr. Thudichum has introduced into his work.

The following is the method given by Vogel for imitating these various colors. It also enables us, as remarked by Dr. Thudichum, to estimate the quantity of uræmatine with a tolerable degree of accuracy:—

I. *Group.* YELLOWISH URINES.

The color is yellow, (gamboge,) mixed with a greater or less amount of water. Starting with the perfectly colorless urine, this group has three gradations or *nuances*:—

1. Pale yellow, (gamboge, with much water.)
2. Light yellow, (gamboge, with less water.)
3. Yellow, (gamboge, with very little water.)

II. *Group.* REDDISH URINES.

With the yellow there is mixed a greater or less amount of red, (gamboge, with crimson lake.) These urines are generally termed "highly colored." There are again three varieties of the group:—

4. Reddish yellow. An admixture of some red to the prevailing yellow, (gamboge, with a little crimson lake.)
5. Yellowish red. The red color becomes more prominent in the yellow body of the fluid, (gamboge, with more crimson lake.)
6. Red. The red color is prevalent, but there is still a slight admixture of yellow, (crimson lake, with little gamboge.)

III. *Group.* BROWN (dark) URINES.

The red color passes through brown to almost black tints, (gamboge, crimson lake, and more or less Prussian blue.)

7. Brownish red. Red, with an admixture of a little brown.
8. Reddish brown. There is more brown color than in the last.
9. Brownish black. Almost black, but with a touch of the reddish brown.

In using this method, a unit is established, which, however, does not express an absolute weight. It is the amount of uræmatine or coloring contained in 1000 C. C. of the first variety, or pale-yellowish urine.

The objections which have been made to this method are met and answered, and the physiology and pathology of the normal coloring matter considered, which (normal coloring matter) is termed uræmatine.

The abnormal coloring matters peculiar to the urine, are urerythrine, the purpurine of Dr. Bird, and uroxanthine or Indican,—the uroxanthine being decomposable into uroglaucine, or indigo blue, and urrhodine, or indigo red. These are fully discussed, and much information is to be obtained by reading the chapters devoted to their consideration. We should think that the literature of this subject is fully exposed, and we regret the want of space to give some extracts from this part of the work. Our knowledge of these ingredients of the urine is, however, still obscure, but we hope that soon there will be more light thrown upon their history, both chemically and pathologically, for indications highly practical may be deduced from their observation in disease.

The author has treated this part of his subject in different portions of the work, but we have, for the sake of convenience, considered it *en masse.*

The author has presented the different tints of the urine, the coloring matters producing these tints, their pathological import, and their chemical tests, in a tabular arrangement. The odor of the urine is stated to be owing to the presence of a series of volatile acids, such as phenylic, (or carbolic,) taurylic, damaluric, and damolic acid.

Chemical reaction of urine.—The acid reaction of the urine is supposed to be owing to acid salts, such as the phosphates and sulphates of potassa and soda, the acid urates and hippurates, and accidentally to free organic acids, such as the oxalic, malic, and tartaric, and their acid salts. The observations of Bence Jones and Vogel are quoted, in regard to the variation of the acidity of the urine at different periods of the day. According to the former observer, the acidity of the urine being in an inverse proportion to the amount of acid secreted by the stomach during digestion, and according to Vogel, the highest amount of acid discharged with the urine per hour occurred during the night, the lowest in the forenoon, and the medium amount in the afternoon.

It is also mentioned that the neutral or alkaline condition is due not so much to the absolute absence of the acid, as to its neutralization by bases, and that these bases are the volatile fixed alkalies; the volatile alkali being derived from the arrangement of the elements of urea into carbonate of ammonia; the fixed alkalies being obtained often from the administration of the different salts formed by the union of the fixed alkalies with the organic acids which are transformed into alkaline carbonates in the system. Another cause of alkalinity from the fixed alkalies is, we would add, as Bird has mentioned, a hearty meal of *bread;* and we have had frequent opportunities to observe this in patients, who, after passing such urine for days and months together, always after breakfast have seen this condition vanish on diminishing or omitting their bread diet at their morning meal.

Attention is also attracted to the fact, that while healthy urine does not become ammoniacal for some hours after emission, yet we sometimes find it becomes so almost immediately after being passed; and this should be attended to, as it is of practical import.

While the ammoniacal condition of the urine is, as the author believes, invariably due to the decomposition of the *urea* in the urinary passages, yet he suggests the possibility, though it has not been proven, of this condition being owing to the direct passage of ammoniacal salts from the blood. The author also takes up the consideration of the various conditions of the bladder which may produce an alkaline state of this excretion.

A neutral and alkaline condition is often of frequent occurrence with the pale urine discharged in anæmic conditions; and attention is directed to the highly practical idea that this condition of urine indicates the employment of tonics, particularly iron.

Next in order are considered the changes produced on the urine by cooling, of the mode of collecting the urine, and of the quantity of urine passed in a given time. Here the author most justly criticises the habit of many observers heretofore, who have given the results of analyses of the urine without any regard to the amount passed in any given time; and we would add, that often we have been prevented giving a satisfactory answer to physicians who have sent specimens of urine to be examined, from the neglect of this observation.

The author presents us with a series of observations on the quantity of urine passed in 24 hours in two healthy adult individuals. In the one case for 76 days, with some interruption, and in the other for 55 days, also with some interruption. The average amount per day in the first was 1950 C. C., or 65 fluidounces; the minimum being 1049 C. C., the maximum 2920 C. C. The second series gives 1723 C. C. per day; the minimum 1040 C. C., the maximum 2655 C. C. He also compares with his own the results of the observations of Lecanu, Valentin, Lehmann, Bischoff, Vogel, and others.

The author here remarks: "The values obtained by my observations, extending over 133 days of two individuals, are throughout considerably larger than those of former observers. They may, therefore, be said to extend our knowledge of the average quantity of urine secreted by adults, and of the lowest and highest amount consistent with healthy functions." We would add that while the observations are numerous, they are nevertheless confined to but two individuals, and are consequently too limited to *satisfy* us.

Again, if our author means us to take the above results as expressing the average quantity of urine passed per day by healthy adults, we must beg to differ, at least so far as to take it as a standard for England, much less for this country. It is true, that for Germany and France, where light wines are much indulged in, this estimate might do.

There is a most marked difference between the above estimate and those of Prout and Dr. Routh. The former estimating the average quantity for 24 hours throughout the year to be 32 ounces; the latter, from observations in 18 cases, 35 ounces. Becquerel estimates 43 ounces for men, and 67 for women. Vogel, 54 ounces; Reuke, from a mean of 23 days in the months of September and October, gives about 41 ounces. Bence Jones remarks, that if 50 ounces of fluid be taken in 24 hours, the average quantity will be 44 ounces. We would add, from a considerable number of observations in this country, that it is not at all unusual to find persons passing below 32 ounces; and we have been led to consider a quart of urine to be about the normal average amount passed by the majority of healthy individuals, variations of course taking place from the habits of the individuals; the quantity depending upon the time of the year, the activity of the skin and other causes, and the amount and nature of the fluids *imbibed.*

The author, after noticing the variations in the quantity of urine in different portions of the day, speaks of the effect of disease in altering the quantity, and most justly remarks upon the high diagnostic and prognostic value of alterations of the amount of urine in disease.

The chapter on the solids and water, and the sp. gr. of the urine, is occupied in discussing the methods of estimating the solids and fluids of the urine. We will confine our attention to the points most interesting to the practical physician, among which is the value of the gravimeter in estimating the amount of solids. In the first place, the author remarks, there are two sources of error arising out of the use of these instruments, which must be corrected before determining the amount of solids after reading from the gravimeter. The first source of error is in the instrument itself, and consists in the division of the scale into equal parts. This, of course, goes upon the assumption that the strata of the fluids in which the gravimeter is immersed are all of equal density. But as the density increases from the surface, the graduations of the scale ought to be corrected upon the different densities of the respective volumes of urine.

The second source of error is the variable temperature of the urine. This last error, as the author remarks, is obviated by bringing the urine to a temperature of 60°, or to correct the reading of the gravimeter by a compensating calculation based upon the temperature found. For this purpose he refers to the table of Mr. Akland. "Ex. Suppose the urinometer to float in urine of 73° temperature at 21. On reference to the table opposite 73° will be found 1·20, which is to be added to the indication 21, making the true specific gravity =1022·2."

Formulæ for calculating the amount of solids in urine by the gravimeter are found in all books on the urine.

The author again states, "that in calculating the solids from the specific gravity, we are liable to commit an error, amounting to one-tenth or one-seventh of the solids actually contained in average healthy urine; and the error may be either above or below the amount actually contained. And in concentrated urines and the urine of disease the error may be still greater." Finally, the value of the gravimeter is summed up by the following: "What with having to employ two gravimeters to compensate and calculate for temperature and density from depth, and being after all subject to inaccurate reading, and the varying proportions of the solids in urine, errors which, in the aggregate, amount to a difference in reality of from one-tenth to one-fourth, I must say, that I think the trouble of the methods with the balance and air-pump nearly equaled, and yet the result of a hundred gravimetered analyses is scientifically and practically not worth one accurate analysis."

The above certainly seems to throw a damper upon those who rely upon the gravimeter in their examination of the urine; but we would remark, however such a statement as the above might compel the chemist, accurate up to his $\frac{1}{100}$ of a grain, to give up its use, it need not so affect the physician who examines urine for clinical purposes, and who must give a wide latitude in his calculations. Where the specific gravity is high, there is no doubt that if more than ordinary accuracy is needed, the gravimeter should not be relied upon.

The following table, drawn up by Dr. Bence Jones to illustrate the inaccuracy of the gravimeter, we think might be used to prove that the instrument is sufficiently accurate for bedside use, with the exception mentioned above. Column A represents the amount of solids found by actual analysis, B the amount indicated by the *gravimeter:*—

	A.	B.
1028·0	found 67·03 grs.	by table 65·2 grs.
1028·5 . . .	" 66·59 "	" 68·5 "
1028·2	" 64·77 "	" 65·0 "
1034·3 . . .	" 84·65 "	" 79·0 "
1024·7	" 60·79 "	" 58·0 "
1024·8 . . .	" 64·61 "	" 58·0 "
1024·8	" 56·67 "	" 58·0 "

In his estimate of the amount of solids excreted daily by the kidneys, the author seems to agree more with the continental observers than with the English. He considers the daily excretion of the solids to range between 850 and 1020 grains; Bird's estimate being from 600 to 700 grains. We have not time or space to discuss this point, however interesting, but would simply state our opinion that the estimate seems to be too high. The remarks upon the fluctuation in the amount of solids in disease, both acute and chronic, are practical and interesting. One or two extracts will serve to indicate their nature:—

> "In chronic disease, with a limited amount of solids, a rise in their amount is, as a general rule, a forerunner of considerable and mostly lasting improvement, and indicates that the chemistry of the body is actively employed in renewing the material of the organs and rectifying their functions. To this rule diabetes mellitus alone forms an exception."

Again:

> "Under all circumstances, a constant and gradual decrease of the amount of solids is as unfavorable a symptom as the decrease of the total quantity of urine discharged, because it indicates the decay of life, and a probably fatal termination of the case."

We now have arrived at that portion of the work which treats individually of the various normal and abnormal substances which are found in the urine. Urea is said to be the principal product of the metamorphosis in the body of the nitrogenous food. Again we find the following:—

> "But one great fact is undoubtedly established; namely, that as urea is the principal product of the metamorphosis in the body of nitrogenized food, the quantity of urea must stand in a direct relation to the quantity of food taken; or, if little or no food be taken, to the amount of nitrogenized component parts of the body disintegrated in the place of food. In this sense must be taken the expression that urea is the measure of dissimilation, if I may be allowed to use this term as the antithesis of assimilation. The amount of urea is the measure of the most important part of the change of matter in the system. The intensity of the change is expressed by the amount of the urea in the urine."

The process of "dissimilation" we suppose to be synonymous with that expressed by Prout as the secondary destructive assimilation.

We do not exactly understand in what relation the author stands, in his idea of the origin of urea, to the two opinions expressed by different authorities, such as Liebig, Bischoff, and others, on the one hand, and Lehmann, Bidder, and Schmidt, on the other; the former maintaining that this substance is obtained from the nitrogenous tissues alone, while the latter suppose it to be derived, first, from the albuminous food; second, from the albuminous tissue. Evidently, however, from the second quotation above, his views are more those of Lehmann, Bidder, and Schmidt. We have always expressed ourselves in the following manner concerning this vexed question: that the urea is obtained from the nitrogenous material of the blood, and that this material is obtained from two sources, the disintegrated tissues, (muscular,) and from the *nitrogenized food.* Its normal source, if we may so use the expression, being from the material of the metamorphosed tissues, while it is obtained from the food only when that food escapes assimilation, either from debility of that function itself, or from the food being taken over and above the requirements of the system. Practically, this view brings us to the following conclusion: that if an individual has eaten largely of nitrogenous food, more than the system requires, after which an excess of urea is passed, we can but infer that this excess was obtained from the unused material. If, on the other hand, we find an excess of urea excreted, where there has been no such indulgence, then we must infer that it is obtained from the tissues, and indicates a too rapid waste of the system.

The average amount of urea discharged in twenty-four hours is put down at from 30 to 40 grammes.

Urea is found in excess, says our author, in all acute febrile diseases, being sometimes double the amount discharged in health. This increase is a more important feature of the disease when the ingestion of nitrogenized matter falls to a minimum.

In diseases which are chronic, and accompanied by impaired nutrition, the amount of urea sinks below the average.

The diminution of the quantity of urea may, however, be due to the failure of the excretory, or activity of the kidneys alone, though, at the same time, an excess may be produced in the system. The excess is then retained in the blood.

For the diagnosis of urea in urine, and other animal fluids, Liebig's method, modified, is adopted, which, stated briefly, consists in precipitating the phosphoric and sulphuric acids by baryta, then filtering, evaporating, and extracting by alcohol.

If albumen be present, the fluid should not be boiled, in order to coagulate it, as has been directed; for in so doing a certain amount of urea is inclosed in its substance. To avoid erroneous conclusions, therefore, albuminous urine, after precipitation with the solution of baryta, should be extracted with absolute alcohol.

A full description of Liebig's method of making a quantitative analysis of urea is given, and also of the modifications necessary to be made on account of the presence of chloride of sodium, ammonia, alantoine, which latter substance, however, has not been discovered in human urine, although it is said to have been found in that of the dog. There are other nitrogenized substances which must be got rid of by a solution of sugar of lead before the test can be used.

Uric acid is another important ingredient of the urine, and we can but notice the more practical points in this chapter. For determining the amount of uric acid, nitric acid is advised to be used rather than hydrochloric, for two reasons: First, nitric acid is more apt to precipitate uric acid than hydrochloric; second, hydrochloric acid favors the acid fermentation and development of certain descriptions of confervoid vegetations, which act as yeast-cells on the urates, decomposing them very rapidly. This process is entirely prevented by nitric acid. If the urine contains albumen, it is best to use the acetic acid, or the common phosphoric acid. Again, if the urine is of low specific gravity, it should be concentrated. This latter direction is highly important to bear in mind, for without such precaution there will sometimes be no precipitate when there is quite an appreciable amount of uric acid present in the fluid. The volumetrical method of Dr. Scholz for estimating quantitatively uric acid is also given.

In regard to the differential diagnosis of the urates, the author remarks, that as they are generally mixed in a deposit, it becomes a difficult question to decide whether the fixed or volatile alkalies are more commonly combined with uric acid. Lehmann considers the mass of the lateritious deposits which take place in febrile urine to be urate of soda, while the late Golding Bird and Prout looked upon them as urate of ammonia. But however important such a decision might be to the chemist, to the physician it makes as yet no difference; for the inferences to be drawn, in a pathological and therapeutical point of view, are the same.

The medium amount of uric acid made by a healthy man, in twenty-four hours, is 0·5 grammes or 7·72 grs. An interesting and important fact is mentioned, which is that great fluctuations take place in the amount of uric acid passed in health. This exhibits to us the necessity of being careful in predicating disease, unless the variation, from what may be considered the normal amount, be very marked.

There is nothing new or especially worthy of note on the pathology of uric acid, with the exception of a table of Becquerel, showing the amount of uric acid in the urine in different diseases.

The author considers the uric acid to exist in the blood as an acid urate of soda or ammonia, and also to exist as such in the urine.

Dr. Bird's theory to explain the manner in which uric acid exists in the urine is considered entirely untenable, and the views of our author are supported with vigor.

A subject of much interest is touched upon, which is the deposition of urates in the urinary passages; and in another part of the work the remark is made that it is singular that the urates should be deposited in the urinary passages, when they are so very soluble in the urine at the temperature of the body. Two causes are assigned for the production of urates in the urinary passages: First, by the absorbing of the watery parts of the excretion while it is in the bladder, thus concentrating the fluid, "in consequence of which a certain amount of the urates passes out of solution, and forms a precipitate."

The second cause is, as our author states, an alkaline condition of the urine, thus causing a precipitate. This latter cause seems to us the principal, if not the only cause. And again, a question has often arisen in our minds in regard to the nature of the deposit which is then precipitated, whether it be the ordinary granular amorphous deposit, the common deposit of fevers and indigestion, supposed by Lehmann to consist for the most part of urate of soda, or whether it be that form which consists of larger spherules, bodies often very grotesque in form, with spicula protruding from them. We are disposed to believe it is the latter, and what leads us to this belief is, in the first place, that the latter form of deposit is less soluble than the former, occasionally very insoluble, and especially if the urine be ammoniacal. Dr. Thudichum mentions a case where the deposit existed in the urine when passed. In this case he had to draw the water off with a catheter. The form of the deposit he represents in a plate, and it is of the nature of the above-mentioned insoluble form.

There are other subjects of interest connected with uric acid treated of in the work before us, but we are necessitated to pass on to another subject. Much could be said, and of a highly practical nature, concerning the causes of the deposit of free uric acid, but space will not permit our doing anything else but allude to them. The doctor advances nothing new upon this point, but gives Scherer's views, who perhaps has paid more attention to this part of the subject than any one else.

We find not much new about creatine and creatinine, with the exception of some experiments of the author upon the quantitative examination of this material, upon which very few observations have been made. According to Dr. Thudichum, 0·305 grammes of creatine were discharged in twenty-four hours. This calculation is an average of twenty-six days in two individuals. The idea is also suggested, that the quantity of creatine, together with that of creatinine, might serve to indicate the intensity of any spasmodic or convulsive action. Another interesting fact mentioned, is the relation of creatine to the amount of fat; where there is much fat in the tissue there are found but traces of creatine.

In regard to hippuric acid, the author quotes the observations of several, which go to establish the fact that the existence of hippuric acid in the urine is much influenced by exercise and rest, and also by diet. Martini, although the above statements seem to be controverted by the observations of Roussin, also found that fatigued horses produce much hippuric acid, and little urea. Horses well fed and quiet produce little or no hippuric acid. The experiments, however, of Roussin are not satisfactory. No notice is taken of Hellei's experiments upon himself, who found that after feeding for a week upon rye-bread, the uric acid disappeared and was replaced by hippuric.

Leaving now the consideration of hippuric acid, we will but glance at the chapter on chlorine and the chlorides. For the diagnosis of chlorine in the urine, the nitrate of silver, and Liebig's method, by means of the nitrate of the protoxide of mercury, are given. Then follows quite a number of pages, which are full and suggestive, on the "daily average amount of chlorine discharged during health and in disease." We will but mention the results obtained from the observations on this substance :—

"1. *That the amount of chlorine discharged during twenty-four hours varies in different individuals*, undoubtedly depends mainly upon the fact that unequal amounts of chloride of sodium are ingested with the food by different persons.

"2. The amount of chlorine discharged by an individual varies on different days, according to and corresponding with the amount of chloride of sodium taken with the food.

"3. The largest amount of chlorine per hour is secreted a few hours after the largest meal of the day, the smallest amount is invariably secreted during the night, (sleep.)

"4. Mental and bodily activity increase the secretory activity for chlorine of the kidneys, at any time during the day or night. This is particularly striking in the morning."

The facts upon which the above assertions are founded, are also thought to give support to the conclusion of Barral, that chloride of sodium increases the elimination of the nitrogenized ingredients of the urine.

"5. That the discharge of chlorides is not only diminished in pneumonia, but also in all acute febrile diseases, and that during convalescence the amount rises sometimes above the normal average.

"6. That the presence of chlorine in sputa, at a time when it is absent from the urine, is not sufficient proof of a determination of the chloride toward the inflamed lung, a proposition which loses all probability from the partial or total disappearance from the urine of the chloride in all acute diseases.

"7. That the absence of chlorine in the urine in disease is influenced greatly by the absence of a small amount of food in the diet of patients.

"8. In dropsical and hydræmic conditions, an increase of the amount of chlorine is a favorable symptom."

From the results of the observations of Gruner, Clare, and Naubauer, the average amount of sulphuric acid discharged during twenty-four hours by healthy young men fluctuates between 1·5 and 2·5 grammes. The influence of diet upon the amount of sulphuric acid discharged is very marked, and its origin is not only from the sulphates in the ingesta, but also, no doubt, from the oxydation of the sulphur which enters into the constitution of albuminous substances.

In speaking of the pathological indication, Dr. Thudichum remarks, that if there can be no doubt about the origin of sulphuric acid, the determination of its quantity in the urine must be useful for determining the amount of disintegration of albuminous matter in the system in cases where the ingestion of sulphur in any form or combination is very low or altogether suspended.

The amount of phosphoric acid discharged in twenty-four hours is influenced, as in the case of sulphuric acid, very much by the nature and quantity of the food. At the same time, the excretion of phosphoric acid is not exclusively dependent upon the quantities introduced.

According to the observations of Winter, quoted by our author, 100 kilogrammes of urine discharge, on an average, 0·27 gr., and 100 centimetres, 0·1 gr. of phosphoric acid. An important fact which is mentioned is, that great fluctuations take place in the hourly amount of phosphoric acid excreted, the maximum being after the principal meal, which was taken at noon, the minimum during the morning.

The following, from Dr. Thudichum, exhibits the influences producing an increase or decrease in the excretion of phosphoric acid :—

"Different degrees or morbid changes of the secretory activity of the kidneys, actual disease of the kidneys, change in the mode of disintegration of matter in the organism, must be looked to as causes of the variation of the amount of phosphoric acid."

The doctor also remarks that a series of observations demonstrate that the same influences which govern the excretion of chlorine and sulphuric acid are active in the excretion of phosphoric acid.

The following table will also exhibit the influence of various diseases upon the excretion of phosphoric acid :—

DISEASE.	Number of days observed.	Min.	Med.	Max.
Males.				
Emphysema of lungs	...	0.6	1·3	2·3
Chronic bronchorrhœa	8	1·3	2·7	4·7
Cancer of liver	11	1·6	2·2	2·0
Subacute rheumatism of joints	18	1·7	2·4	3·1
Hemiplegia consequent on apoplexy	35	1·0	2·7	5·2
Hydruria	3	4·4	5·0	5·8
Dropsy, under influence of diuretics; chlorides very much increased	2	...	1·8	...
Females.				
Diabetes insipidus	14	3·2	4·8	7·8
Ascites	15	1·7	3·0	4·7
Chronic rheumatism	7	2·7	3·3	4·2
Spinal irritation	...	2·1	2·4	2·8
Amenorrhœa	...	2·1	2·2	2·3
Scrophulosis	...	2·6	2·5	5·2
Tuberculosis of lungs	10	1·5	...	3·9
Chronic erysipelas of face	11	1·5	...	3·6

The remaining part of the work treats of the following substances: the free acid of the urine; potassa and soda; lime and magnesia; iron; ammonia; carbonic acid; blood and its anatomical elements; hæmatine, or hæmato-globuline; chylous urine; casts of uriniferous tubules; albumen; pus; mucus; fat and oil; cancer-cells and tubercular matter; echinococcus hominis; spermatic filaments, or spermatozoa; bile and biliary matters in urine; leucine and tyrosine; xanthine; hypoxanthine; sarcine (carnine;) cystine; allantoine; grape sugar; acetone; inosite; urerythrine; uroxanthine, or Indican uroglaucine; urrhodine; phrenylic, or carbolic acid; damaluric acid; oxalic acid; lactic acid.

Then are considered what the author terms urophanic bodies, which are divided into—First, the urophanic organic acids; second, urophanic organic bases; third, urophanic inorganic bodies.

The acids are succinic, malic, tartaric, citric, tannic, toluylic, salicylic, camphoric, anisic, and cuminic.

The bases are quinine and quinidine, strychnine, and santonine.

The inorganic bodies are iodine, arsenic, and antimony, lead, mercury, and copper.

Some of the above-mentioned subjects would admit of a lengthened notice, if time and space permitted; but as we have already encroached upon our limits to a greater extent than was intended, necessity forbids but a passing glance at some of the more interesting and practical topics. Nor will we pretend to give anything but a brief analysis.

The chapter on the free acid of the urine is rather meagre, and from its interest in relation to the diseases of assimilation, deserves, we should think, a fuller discussion.

The following extract, from the chapter on potash and soda, is of interest:—

> "There is only a very small quantity of potash present in the urine, by far the greater part of the acids being in combination with soda and the alkaline earths. The value which an accurate knowledge of the quantities of potash and soda would have, is evident from their relations to different parts of the animal economy; the salts of potash almost exclusively predominating in the muscles, and occurring in the blood only in very small quantities, while the salts, with soda as their base, prevail in the blood, and, it may be well assumed, form no part of the solids of the juices of the flesh."

Lime and magnesia.—Dr. Thudichum lays down the rule that deposits of the earthy phosphates can exist only in urine, exerting an alkaline reaction upon test paper; there, however, being one (questionable) case in which a deposit may occur in acid urine; namely, when urine contains little or no free acid there exists an acid reaction from the presence of chloride of ammonium, and in this case the deposit would consist of phosphate of magnesia, this salt being insoluble in chloride of ammonium, while it dissolves the phosphate of lime.

In regard to the latter salt, Dr. Thudichum says, that crystallized deposits of this substance have not been observed, but, at the same time, remarks that it is more than doubtful whether it does not enter into the chemical composition, or is an admixture of some crystalline sediments. Attention is also attracted to an important fact in the diagnosis of these deposits by the microscope, namely, their great transparency, which prevents their discovery unless great pains are taken in illumination.

The proportion in which the phosphate of lime in the urine stands to the phosphate of magnesia is said to be about two to one. The presence of a deposit of phosphates in the urine, or their appearance by heat, is mentioned as by no means indicative of an excess.

The effect also of meat as causing an acid condition of the urine, while vegetable diet makes it alkaline, is also mentioned, and is a highly practical consideration.

Grape sugar.—The qualitative tests of sugar in the urine, which Dr. Thudichum seems to place foremost for accuracy and delicacy, are bismuth and copper, with caustic potassa. No mention, however, is made of the fallacies incident to the copper test, while the reduction of the bismuth is said to be produced by no other constituent of the urine, either normal or pathological, which, being the case, gives an advantage to it over that of Trommer's, though perhaps Trommer's is the more delicate.

Pathological indication.—Dr. Thudichum seems to be very skeptical concerning the assertions of those observers who have testified to the existence of sugar in the urines of healthy persons; and also mentions that even concerning those cases of acute disease, in which the temporary presence of sugar is said to have been discovered, doubt has not been perfectly excluded.

The existence of inosite in the meat eaten by carnivorous animals is thought by the author to prevent the conclusion of Claude Bernard, that the sugar found in the liver is formed from albuminous substances.

Oxalic acid.—The discussion of this substance occupies quite a lengthy chapter. The part which deserves our more particular attention is that which treats of the physical character of oxalate of lime and its pathological import, and we only regret the necessity of noticing it so cursorily.

An important observation made by the author, and one which is directly opposed to that of other observers, among whom we find the late Dr. Bird, is that the octahedral crystals of oxalate of lime have the power of polarization. This idea of their non-polarizing power is said, by Dr. Thudichum, to have been based upon the assumption that they crystallized in the regular or cubic system. The following extract will give the results of Dr. Thudichum's experiments:—

> "I have already remarked that pure oxalate of lime can readily be ascertained to possess the power of polarizing light. But the ordinary oxalate of lime, the octahedra, have a very faint polarizing power, which can only be brought out fully by reflecting a ray of the sun through the crystal lying between the two Nichol prisms, and excluding from the eye every other light but that coming from the crystal in the microscope. The explanation of the fact that the ordinary octahedra polarize very faintly seems to be that, as they are very flat, their principal axis is mostly standing almost perpendicular. Now, as a crystal polarizes the less, the more parallel with its principal axis are the rays of polarized light passing through it, it is probable that the octahedra polarize only little, because the polarized light passing through them is almost parallel

to their principal axis. This may be one reason, though, no doubt, others co-operate in obscuring the polarization of light by these crystals when ordinarily illuminated.

"It is now clear that there is no optical reason for assuming octahedra and dumb-bells to be made up of different materials. And as there is not a shadow of chemical evidence for the supposition that the dumb-bells consist of oxalurate of lime, they must for the present continue to be ranged under the oxalate."

The views of Dr. Thudichum on the pathology of oxalate of lime are conveyed by the following extracts, which are printed in italics:—

"1. The presence of oxalic acid or any of its compounds in urine may indicate that oxalic acid or any of its compounds has been introduced into the stomach, as an ingredient of food, as a medicine, or as a poison.

"2. The presence in the urine of any considerable quantity of oxalic acid, in any form, for a long period of time, during which the ingestion of oxalic acid, in any form, into the stomach was excluded, indicates the existence of a disorder, the nature of which is, at present, entirely unknown.

"3. Oxalate of lime is frequently found, in not very small amounts, in the urine of patients recovering from severe diseases.

"4. The presence in urine of such small microscopical traces of oxalate of lime that their quantity cannot be estimated by quantitative analysis, is of no practical or pathological importance.

"5. The presence of oxalate of lime in the urine may indicate disease of the kidney, with which it is not rarely associated."

The treatise of the late Golding Bird, on urinary deposits, has, for a long time, been known to the medical profession, and stood foremost among the works on the subject; but, from the rapid advance of the science of urology, it has gradually become, in some respects, a book of the past; but even now we are not aware of any work, of the same practical nature, which can yet take its place; and we were pleased to hear that one of our pet books was not to be pushed to the farthest-off shelf of our library, but would, as formerly, have its place on our table, among our daily guides, by being brought up to the day,—this day of rapid advancement, in certain directions. The old-fashioned, tedious, and unsatisfactory method of analysis, we are all becoming wearied of; and additions to Dr. Bird's work, giving a full description of the volumetrical processes, would still perpetuate this excellent treatise.

Dr. Birkett, we hoped, had thus improved the work of his late friend; but we are sorry to say that, while he has added not a little new matter, this most important and practical information he has either but slightly hinted at or entirely neglected to give us.

The physician in daily practice is, above all others, the one who has used this treatise of Dr. Bird, and who most needs a prompt and easy method of analysis; and at present he can only find it in the use of the volumetrical process. We would also suggest, though perhaps somewhat out of place, that some of our intelligent druggists or chemists should prepare these test-solutions, so that physicians might obtain them. The learning to use them would be but a moment's work. Physicians would then be tempted to make use of the means presented to them, and disease would be studied with that accuracy which the day demands.

We have digressed somewhat, in the above remarks, from our path; our intention was merely to give a brief notice of the above treatise, more especially as the English edition of the same has been so ably reviewed, and its contents so fully exposed, in the pages of this journal, some time since.

Among the additions by the editor which attracted our attention more especially, was the account of the analysis made by Hassall, confirming those of the German chemists, who have determined that the deposit which is so common in fevers and indigestion, is not urate of ammonia, but consists, for the most part, of uric acid, combined with lime, potassa, and soda, with small quantities of ammonia.

The remarks on the physiology and pathology of sugar are entirely new; the late observations of Dr. Pavy are here presented.

The cuts, exhibiting the confervoid growths which occur in the urine, would, we think, have been much more beautiful and truthful if they had been copied from those accompanying Hassall's excellent paper in the Medico-Chirurgical Transactions.

At page 317, Dr. Birkett has added a plate, which is said to exhibit the fructification of the "penicillium glaucum," but we must confess our inability to see any such exhibition in said plate. We cannot close these brief remarks without noticing the fact, that the American publishers have given us a very neat and beautiful edition of this work.

ART. III.—*Illustrations of Difficult Parturition.* By JOHN HALL DAVIS, M.D., Lecturer on Obstetric Medicine, etc. etc. pp. 284. London: Churchill. 1858.

THIS little work belongs to a class always hailed with pleasure by the practitioner, because read with so much profit. Containing the records of difficult cases which have occurred in an extensive practice, with the remarks, upon doubtful points, of one whose learning has been tempered by experience, the older practitioner finds in them a counterpart of the difficulties he has himself encountered, and the younger the nearest possible approach to personal experiences.

The author is a man of high standing in this branch of practice, a mantle of great professional reputation having descended upon him from his father; he has enjoyed for years the advantages to be derived from several appointments to public institutions, and he has now a large metropolitan practice; his learning, his experience, and his position are, therefore, guarantees that he would not occupy the time of his professional brethren in vain, nor call upon them for a hearing without having something to communicate worthy of their attention.

The work is, as its title indicates, a clinical record of cases, and we are not, of course, to expect that completeness which characterizes a treatise, nor even the exhaustion of those subjects which are considered. About two-thirds of its pages are occupied with the history of cases, one hundred and forty-four in number, and, so far as these are concerned, there is no need or room for criticism; the other third contains a brief exposition of the principles which guide the author in resorting to instrumental assistance in conducting the different classes of labor, and in remedying the various forms of difficulty. This part of the work is excellent; it bears the marks of experience and study; and the remarks upon the treatment of the various forms of difficult parturition exhibit so much sound judgment in regard to the choice of means, and inculcate so great caution as to their use, as to render them valuable to every member of the profession, but more especially to the young. The work closes with the statistics and analyses of seven thousand three hundred and two deliveries which have taken place under the author's superintendence.

The introductory chapter contains a brief sketch of the causes of delayed and difficult labor as depending upon the position of the child, the forces which propel it, or the passages through which it is transmitted, and a very general notice of the treatment required for the different kinds and degrees of difficulty. The remedial measures for difficult parturition, of course, vary in character as widely as do the nature of the cases which render assistance necessary, and nowhere is skill and sound judgment more requisite on the part of the practitioner than in discovering the cause of the difficulty and in adapting remedies to it; his success will be marked in proportion to his acuteness in observation, his judgment in selection, and his promptitude in administration. Some of the rarer causes of delay are alluded to in this introductory chapter, such as irritating ingesta, which are stated to interfere sometimes with the progress of labor, and even to occasion convulsions; cases of this kind are mentioned, and find their appropriate treatment in an emetic. Especial pains are taken by the author to impress the fact that the bladder cannot be too carefully watched during labor; a distended condition of this organ is frequently the cause of vexatious delay which a timely resort to the catheter will remove, while inattention to this point has been followed by the most serious results. In some cases, no cause for inefficient uterine action can be found but general debility; here light nourishment and mild cordials form the appropriate treatment. When the uterus is sluggish in exerting its powers, the administration of ergot is counseled; "obstructing membranes must be divided," while "cicatrixes, and smallness of the vagina, not arising from any morbid source," may generally be trusted to the natural efforts, although they sometimes require the administration of relaxing remedies. In those cases where delay is caused by rigidity of the soft parts, "sometimes the cause, sometimes the result, of premature discharge of the waters," the rigidity may be removed by tartar emetic, or, when the strength permits, by blood-letting, or by the use of opium. The latter remedy is to be used with caution, and is sometimes most successful when exhibited after moderate depletion. It is to the treatment of this condition of things that chloroform has been especially recommended; we think, however, that its friends have claimed too much certainty for its action in removing rigidity of the soft parts, for we have seen instances where it failed, like the other remedies, in overcoming the cause of delay, so annoying to the accoucheur and so painful to the patient; and Dr. Davis intimates as much.

> "For the purpose of quieting muscular spasms, soothing the nervous system, and so relaxing these rigid conditions of the genital passage, *chloroform* in later years has been much resorted to by some practitioners; and I must confess that whenever I have employed it with this intention, I have rarely found it fail me. But it is, in my opinion, an agent of too great potency to be used without great caution."

The concluding sentence of this paragraph gives the author's position in regard to the use of anæsthetics in obstetrical practice. He uses them himself whenever necessary; he bears testimony to their beneficial effects, yet evidently is afraid that upon the strength of his recommendation others may do mischief with them. This extreme caution in regard to the use of anæsthetics, and of chloroform in particular, will not be surprising to those acquainted with the general feeling which has prevailed against these agents, ever since their introduction, in the city where the author resides, and that one who uses chloroform and counsels its administration in obstetrical practice there, has against him the authority of one of the most eminent accoucheurs and teachers of the metropolis, who is not only strongly, but bitterly opposed to its use. It may be that some of the extreme caution manifested by the author speaking of this article may be thus accounted for, but whether we are right in our conjecture or not, we cannot help expressing our regret that he does not occupy a more advanced position in regard to the use of one of our most valuable remedies.

While upon this subject we will conclude it by quoting some other paragraphs in which the remedy is mentioned, and let the author speak for himself. The first we take from the directions for the application of the forceps.

> "In some cases there is extreme restlessness, and our patient is perfectly uncontrollable. Here, the risks of a forceps operation would be greatly increased, unless we adopted means to prevent them; we may, therefore, find it expedient to resort to the sedative influence of chloroform. I may observe, in passing, that I do not often appeal to this agent in ordinary labor, and by no means in all obstetric operations; but it seems to me that this is one of the conditions in which this anæsthetic vapor may be usefully employed."

The other paragraph is from the directions for the management of those fearfully trying cases where the presentation is transverse, the waters have long escaped, and the uterus is firmly contracted around the child.

> "As regards the last agent, [chloroform,] it certainly removes all suffering, and, in most cases, produces the necessary relaxation. I have known it fail, however, more than once, in effecting that object, although the patient was reduced to perfect unconsciousness. Moreover, there are constitutions and conditions of the thoracic organs in which it cannot be safely administered; and, in some instances, it has appeared to me to have predisposed to hemorrhage after delivery. The uterus has been left in a state of inertia, considerable trouble and anxiety have been occasioned, although the patients in the end did well."

By far the most important point in cases of difficult parturition is to determine when interference is necessary, to decide that the patient has reached a point beyond which she cannot go without running serious risk. To the young practitioner, a decision upon this point is peculiarly embarrassing, and is only equaled in its difficulty by its importance. We are told by the author that we must regulate our conduct as to interference by "*time* and *symptoms*." To the first part of this proposition we are inclined to object entirely, and practically the author is with us, although theoretically he lays down the rule as above; there is always a saving clause introduced which throws the element of time, just where it should be, into a very subordinate position as bearing upon this point. The different limits which have been assigned to our delay by different authorities, varying from a period of four to twenty-four hours, and the fact that cases are given by the author as well as by other eminent obstetrical writers, in which the most serious results have followed but a very short period of delay, are sufficient to show that we cannot decide this question by a mere reference to the time which has elapsed since the labor began. We give, however, the author's rule.

> "In my own practice I adopt as a rule, modified by the circumstances of each case, a limit of from four to six hours of arrest of the head in the second stage of labor, under strong pains, in one position, from which it neither advances nor retires."

In making these remarks we do not overlook the fact that the author is speaking of a class of cases "where difficulty arises with a pelvis of apparently standard measurements, and where nothing positive can be ascertained about the cause of the impediment." Yet even here there are so wide variations in the energy, frequency, and force of the uterine contractions, and in the constitution, temperament, and state of health of the patient, as to render it impossible to adopt the rule of the author, or any other course of action based upon time alone; and we believe the prominence given to the ground of decision arises more from obedience to the custom of writers than from any conviction of its value derived either from theory or from practice.

The symptoms which should excite anxiety for our patient's safety, and indicate that interference is necessary, are then detailed; they are "a feverish pulse and skin, loaded tongue, dry, heated vaginal mucous membrane, a brown, often offensive discharge from the uterus, tenderness and swelling of the genital surfaces, and soreness of the abdomen."

> "As an aid to our decision in favor of interference, I may refer to a sign, which I have for several years past found useful as an intimation of approaching danger from protracted pressure in obstructed labor, namely, an olive-colored or brownish slimy discharge, a depraved secretion from the mucous membrane, the result of long-continued irritation. The child may often be saved after the occurrence of this discharge, which differs in character from that of meconium."

A sketch of the mechanism of labor precedes the consideration of operative deliveries; in this the author follows Nægele, and there is nothing different from what is usually found in text-books; the two transverse positions, in which the face is directed to the right or to the left ilium, the first and second presentations of Ramsbotham, are called "irregular," and stated to occur very rarely. The particulars of the mechanism of each position are briefly given, and the importance of fully understanding them impressed by the following lines:—

> "The practitioner who is well acquainted with the above positions, and the mechanism of the head's advance in labor, will not be so ready to withhold his reliance on nature, as he would be, and as our forefathers were, without the advantage of that knowledge"

In the chapter upon forceps deliveries, the indications for their use are given, and the precautions to be observed in their application, as well as the characteristics of a good instrument. In regard to the latter point, the author differs from the majority of British authorities in preferring one with the pelvic curve; the instrument he prefers was introduced by his father, and is known as "Davis's forceps," its chief peculiarities being the width of the fenestræ of the blades and the great convexity of their outer edge as compared with the concavity of their inner. This instrument is fully described and figured in Professor Meigs's work on obstetrics; he also gives this instrument the preference, and dwells on its peculiar excellences, perfect adaption to the curve of the pelvis, and the great equality with which the pressure upon the child's head is distributed. In counseling the use of the forceps, as well all other instruments, the author inculcates the greatest circumspection and caution.

> "In the use of the forceps we must be most gentle; no hasty nor violent manœuvres are admissible, either in the introduction of the blades or in the traction which we employ. We must also be careful as to the *degree and duration* of extractive force which we exert; serious have been the results of inattention to this precaution. Most scrupulous must we be as to the safety of the mother in every way, knowing that in one short moment, by one rash act, we may inflict upon her an irreparable, nay, a fatal injury."

The author does not believe cases very frequently occur which justify the application of the forceps when the head is at the brim of the pelvis, the difficulties being of such a nature when the head is arrested so high up, and the long forceps being so dangerous an instrument, as to call for the safer operation of craniotomy. In regard to the well-known practice of Simpson in cases of this description, he gives the following opinion:—

> "It has been proposed by Professor Simpson, in revival of a practice of bygone times, to substitute turning for long forceps and craniotomy operations, in all cases of contraction of the pelvic brim, where the passage of the hand is at all possible. But it appears to me that the results to the child in footling cases, *ab origine*, and in those derived from version in cross presentations, even in standard pelves, are not calculated very favorably to impress one in its favor. We have to reflect, also, upon the additional suffering and risk which the operation of turning might occasion to the mother, and with so little prospect of an equivalent good.
>
> "I am, nevertheless, disposed to admit, that it may be right to attempt the operation of turning in a small pelvis, in *extremely rare instances*."

While he distinctly teaches the great danger likely to result from the use of the long forceps, he cannot find, in turning, any substitute for them in the cases for which they are recommended, but fully indorses the opinion of Denman, that turning, under the circumstances, "is rather to be considered among those things of which an experienced man may sometimes avail himself in critical situations, than as submitting to the ordinary rules of practice."

A few pages of interesting statistics are given, showing the frequency of forceps and craniotomy deliveries in British and continental practice; and this subject is then closed with evident, and allowable, self-gratulation upon the fact that it has been the author's "good fortune never to have lost a single patient after forceps delivery." This success he attributes to caution in the employment of the instrument and careful after-treatment of the patients. Many of the cases bear testimony to extreme watchfulness of the earliest indications of inflammation after instrumental delivery, with prompt and decided treatment, and to a careful practical attention to all the admirable directions laid down in the remarks upon "treatment after operative delivery." Every reader will look upon the after-treatment as no mean element of the success which has thus far attended the author, although he bears willing testimony to the fact that his professional friends who have called him in consultation "have in no instance added the dangers of delay to the difficulties before them."

In considering the cases which require the operation of craniotomy, the reader is again warned against injudicious and too long-continued efforts to deliver with the long forceps, as being fraught with danger to the mother, and likely, therefore, to result in the loss of both instead of one; he gives cases which justify his remarks upon the subject, and states that "in a pelvis distorted at the conjugate diameter to the extent of two inches and a half, a prior use of the forceps, upon a child at or near full time, would be most improper." He gives the space necessary for delivery by the natural passages, with "every attainable advantage from operative skill, and the best adapted instruments," as one and a half inches in the antero-posterior direction at the brim, or of "at least one and three-eighths of an inch in the conjugate, and three and a half inches from ilium to ilium."

In the beginning of the consideration of this subject he plainly states the principle that although craniotomy may have been necessarily performed in one labor, the patient may be delivered without instruments and without difficulty the next time; and, on the other hand, that because a woman has been once delivered without the operation, it is no proof that it may not be necessary at her next confinement. These paragraphs may prove of consolation to those who have been obliged to resort to the operation where the patient had formerly borne children; in these cases the public are too apt to take the natural delivery as the standard of success, and unjustly to conclude that because a woman has once given birth to a child without assistance she can do so again. We have known two cases in which craniotomy was considered necessary by several experienced practitioners, in both of which the patients had previously, although with great difficulty, given birth to a living child. We have a patient now under our observation whom we have attended in these labors; the first two were each of more than thirty hours' duration, and would have been terminated with the forceps, had there been any instruments within a day's journey, and both children were still-born; yet in her third confinement she was delivered of a living child within one and a half hours after the first pain was felt. The first children were males, the last one a female, and their different size would fully account for the different character of the labors. Inordinate ossification of the head, as the author remarks, may also render craniotomy necessary in a case where the patient has borne living children before, and differences in other respects make it impossible to judge of one labor by another.

The details of the operation of craniotomy bring to notice the instruments which the author uses. The perforating scissors of Smellie, for opening the cranium, he adopts with authorities generally; but the crotchet, he says, he has "long discarded, after ample trial, as a most inefficient instrument in the more difficult cases." He has given two or three cases in illustration of the statement that he has been called upon repeatedly to finish deliveries which had been commenced with the crotchet, "in the hands of practitioners not otherwise undexterous." He, therefore, prefers the craniotomy forceps as meeting the demands of any difficulty, and gives the following description of what he considers to be the proper construction:—

> "In this form there project from one blade, which is passed *within* the skull, three strong teeth disposed in a triangular form, which, when the blades are locked, fit into three corresponding openings in the opposite or outside blade, but not passing through, are guarded from doing injury to the mother. The blades are separable, and the lock and handles made like those of the English forceps"

We have been thus particular to give a description of the instrument in the author's own words that our remarks upon this part of the subject may be better understood. We do not claim sufficient experience to give any great weight to our judgment upon the comparative merits of these two instruments, but we have had sufficient to convince us that both of them are generally faulty in their construction. That the author has been influenced in his decision by the bad work of the instrument-makers we do not for a moment suppose; but, for ourselves, we hesitate to condemn an instrument which we have not seen of proper shape and construction. The crotchet recommended by all modern writers has a curved shaft, to allow of easy and efficacious application to the head as it lies in the pelvis, and of a proper expenditure of the force exerted. The instrument is thus figured, with a gentle curve from the handle to the turn of the hook, on page 356 of Churchill's Theory and Practice of Midwifery,* and in plate xvii. fig. 5 of the same author's Researches in Operative Midwifery; and in plate xv. fig. 8 of the same work, is represented Mesward's crotchet, of which the modern instrument is a modification, and in which the curve of the shaft is much more strongly marked. Yet a crotchet in our possession, made by one of the best-known instrument-makers of this country, is perfectly straight from the handle to the bend of the hook, and the point of the latter is bent down so nearly parallel to the shaft as to render it almost impossible to obtain a hold or exert any force with it. An examination of the cuts we have mentioned,† and a moment's reflection, will convince any one not only of the difficulty of applying such an instrument, but of the fact stated by Murphy,‡ that the force exerted by it is thrown entirely on the point of the instrument, and tends rather to break off pieces from the skull than to draw forward the head of the child. Murphy is, we believe, the only writer who dwells upon the importance of a properly-shaped instrument, and upon the usefulness of such a one as we have described, and which is a pattern, so far as we have seen, of those in the hands of practitioners in this region, certainly of all we have seen from the same maker.

Again, to refer to the craniotomy forceps. So far as our opinion goes, we are ready to assent to the author's opinion as to the great superiority of this instrument over the crotchet. The instrument we have used resembles the one described above, except that the blades are not separable, but are connected by a permanent joint. Were this the only objection, there would be but little ground for complaint, but the projecting teeth, instead of being placed upon the blade made to pass inside the skull, are placed upon the one curved to pass between the pelvic wall and the head! The difficulty of using such an instrument may be imagined. In two cases, after having succeeded in its application, it proved a most effective means of accomplishing the delivery, which the crotchet had failed to do; but in a third case it was impossible to apply it, and the fatal result which followed we attribute to the delay occasioned by the faulty construction of this instrument.

We have taken up so much space already that none is left for the further consideration of this, or other subjects. There are chapters upon the indication of premature labor, upon breech, footling, and transverse presentations, which we cannot examine, but which are all characterized by that great caution and sound judgment to which we have already alluded, and which make the work a reliable guide to the young and a useful companion to the old. There is one change which might be made in the arrangement of the work, however, which we believe would be an improvement. Were the cases in illustration of each variety of difficult labor placed immediately after the remarks upon the subject, as is done in that excellent work of the elder Ramsbotham, Practical Observations in Midwifery, we believe it would be perused with greater pleasure, if not more profit; such an arrangement serves to break that monotony which arises from reading several hundred cases one after the other. This, however, is a matter of minor importance; our chief regret in regard to the work is that the author has not given us more of it, both by extending his remarks upon the subjects treated of, and by including all within the limits of clinical obstetrics. We trust we may soon realize, what he intimates in his preface that we may hope for, further productions of his pen upon this subject.

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* Third edition. London, 1855.

† The crotchet figured in Ramsbotham's work on Obstetrics is, in our opinion, faulty, from the straightness of the shaft, but is far preferable to the one above alluded to.

‡ Lectures on Natural and Difficult Parturition.

ART. IV.—*A History of the Discovery of the Circulation of the Blood.* By P. FLOURENS, Perpetual Secretary of the Academy of Sciences, (Institute of France;) Professor of the Museum of Natural History of Paris, etc. etc. Translated from the French, by J. C. REEVE, M.D. pp. 175. Cincinnati: Rickey, Mallory & Co. 1859.

IN a former number of this journal we gave our readers a somewhat extended review of this work, for the reason that no English translation had at that time been made. We are now gratified in being able to announce an American edition just issued from the press, in a style that reflects much credit upon the publishing enterprise of the West.

In the preface to the edition before us the translator justly remarks that

> "This discovery may be said, without exaggeration, to be one of the most important events in the history of medical science; some of the greatest minds ever in the profession took part in it; it exerted an important influence upon the treatment of disease; it marked a new era in the history of medicine, and effected a revolution in scientific research."

Dr. Reeve is an accomplished French scholar, and in furnishing a faithful translation of what may safely be said to be the most complete history of the discovery of the circulation of the blood that has ever been published in the English language, he has supplied information upon a most interesting topic, and furnished a neat and most readable little volume that should be found in every medical library.

ART. V.—*A Manual of Elementary Chemistry, Theoretical and Practical.* By GEORGE FOWNES, F.R.S., etc. Edited by ROBERT BRIDGES, M.D., etc. 8vo., pp. 600. Philadelphia: Blanchard & Lea. 1859.

THE present edition of this popular manual is a reprint from the seventh London edition, which, having been carefully revised by its English editors, Drs. Jones and Hoffman, will be found to be complete as regards the necessary additions and alterations that the progress of chemical science in the past few years demands. As a practical outline of chemistry and a faithful guide to the student, it is too well known to require commendation on our part. Being recommended as a text-book in many of our institutions, it has become a familiar companion to many who will eagerly seek the new edition, which has been carefully supervised in its passage through the press by that accomplished and well-qualified chemist, Dr. Bridges.

ART. VI.—*On Poisons in Relation to Medical Jurisprudence and Medicine.* By ALFRED SWAINE TAYLOR, M.D., F.R.S., etc. Second American, from the second and revised London edition. 8vo., pp. 755. Philadelphia: Blanchard & Lea. 1859.

TEN years have elapsed since the first appearance of this work, during which time the author, probably the leading toxicologist in England, has been almost incessantly occupied in the investigations of poison in criminal cases, the results of which have, from time to time, appeared in the London periodicals. All that is of importance in the great mass of these inquiries will be found to be comprised in the present edition, which has been completely changed in its arrangement. Taking the same position as his treatise on "Medical Jurisprudence," it can safely be said to be the most reliable work on the subjects of which it treats that has as yet appeared in the English language.

ART. VII.—*Woman; her Diseases and Remedies. A Series of Letters to his Class.* By CHARLES D. MEIGS, M.D., Professor of Midwifery and the Diseases of Women and Children in the Jefferson Medical College of Philadelphia, etc. Fourth edition, revised and enlarged. 8vo., pp. 706. Blanchard & Lea: Philadelphia. 1859.

THAT this work has been thoroughly appreciated by the profession of this country, as well as of Europe, is fully attested by the fact of its having reached its fourth edition in a period of less than twelve years. Its value has been much enhanced by many important additions, and it contains a fund of useful information, conveyed in an easy and delightful style. Every topic discussed by the author is rendered so plain as to be readily understood by every student; and, for our own part, we consider it not only one of the most readable of books, but one of priceless value to the practitioner engaged in the practice of those diseases peculiar to females.

ART. VIII.—*Elements of Medicine; a Compendious View of Pathology and Therapeutics; or, the History and Treatment of Diseases.* By SAMUEL HENRY DICKSON, M.D., Professor of the Practice of Physic in the Jefferson Medical College of Philadelphia, etc. etc. Second edition, revised. 8vo., pp. 768. Philadelphia: Blanchard & Lea. 1859.

A SECOND edition of this work having been called for, the author has faithfully performed his duty in giving it a complete revision. Among the more important alterations, we have noticed the addition of a chapter on Addison's Disease, and a modification of that upon the affections of the chest; while the article on Bright's Disease has been rewritten. Besides these, many additions have been made throughout the whole work, which will thus serve to render it more acceptable, in every respect, to the practitioner. The student who has had the good fortune to attend the admirable lectures of the author, will welcome the present edition as a useful guide in his professional pursuits; while he who is about to enter upon his pupilage, will seek it as a reliable text-book, written in so lucid a style as to be readily comprehended by the dullest intellect.

ART. IX.—*A System of Surgery: Pathological, Diagnostic, Therapeutic, and Operative.* By S. D. GROSS, M.D., Professor of Surgery in the Jefferson Medical College of Philadelphia, etc. etc. 2 vols. 8vo., pp. 1162–1198. Philadelphia: Blanchard & Lea. 1859.

WE have simply time, in the present number, to chronicle the appearance of this long-announced and long-expected work, and to say that, in point of mechanical execution, it is by far the most beautiful production of the kind that has ever been issued on this side of the Atlantic. It is illustrated by nine hundred and thirty-six engravings, executed in the best style; and forms a more complete body of the art and science of surgery than is anywhere else to be found in the English language. The author has, in fact, not allowed anything to escape him. Nearly seven hundred pages are devoted to the consideration of the principles of surgery, while the remainder of the volumes is taken up with the discussion of the nature and treatment of the various injuries and external diseases incident to the human frame. A much larger space than is customary has been allotted to surgical pathology and surgical diagnosis. The diseases of the eye and ear, and even of the teeth and gums, usually excluded from treatises of this description, have received a full share of attention. Another valuable feature which we notice in the work is the frequent reference to the author's personal experience, now extending through a period of upward of thirty years.

Original Communications.

ART. I.—*Contributions to Obstetric Jurisprudence.* By HORATIO R. STORER, M.D., of Boston.

CRIMINAL ABORTION. (CONTINUED.)

VII. ITS OBSTACLES TO CONVICTION.

WE have already seen that there are special, though, it is to be hoped, not wholly insurmountable causes for the existing prevalence of abortion. It now becomes our duty to consider some of these reasons in detail, in so far as they relate to and obstruct the course of justice.

It would seem, from what has been previously said, that little doubt could be entertained of the inefficacy of our present statutes against abortion. There are few of the States whose laws on this point are so wisely and completely drawn as in Massachusetts; yet, as they there stand, they cannot, as such, be enforced. In that Commonwealth, according to the reports of the attorney-general, during the eight years from 1849 to 1857, omitting 1853—as there seems to have been no report rendered for that year—there were, as we have seen, 32 trials for abortion, and not a single conviction!

A committee of the State Medical Society of Massachusetts, to whom the propriety of a professional appeal to the Legislature for more protective statutes had been referred by the District Society of Boston, having reported against such action, on the ground "that the laws of the Commonwealth are already sufficiently stringent, provided that they are executed,"* it becomes the more necessary for us to strike at the root of the whole matter, and to show, if possible, why conviction, unless in case of the death of the mother, cannot at present be obtained.

It has been thought, even publicly argued, that in the fact that statutes against abortion are almost everywhere not only not enforced, but not attempted to be enforced, there is afforded strong evidence of the existence of an ultimate and absolute impossibility of thus meeting the crime. The idea, though a fallacious one, is yet attributable to an important and evident cause.

That the prevalence of abortion is in great measure owing to ignorance of guilt, on the part of the community at large, we have shown. We now assert that its futile prohibition by the law, its toleration, are plainly in consequence of similar ignorance on the part of legislators, and of officers of justice.

Our communities form their own laws, and, therefore, as was pointed out at the commencement of our remarks, these must necessarily bear the stamp of public opinion; while the officers by whom they are to be enforced—juror, attorney, judge—looking to the only source possible for their enlightenment on this subject, to medical men, have hitherto found but few bold and honest statements,† and these unindorsed by the mass of the profession; or, in the total silence, a practical sanction of the popular belief. This is no exaggeration; the assertion is fully borne out by facts. Need we wonder, then, that the laws are not enforced, that indeed their enforcement is not attempted? But this first and great cause, it is apparent, is by no means an essential one.

We need add nothing to what we have already said, of those obstacles to conviction, arising from circumstances common in greater or less degree to other crimes;—the difficulties of detection and of obtaining proof, however great these are allowed to be,—but we proceed at once to consider the laws themselves by which in this country the crime of abortion is attempted, or is expected to be suppressed.*

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* Medical Communications of the Mass. Med. Soc., 1858, p. 77.

The writer having been a member of this committee, here enters, as he has already done by letter to the councillors of the Society, his earnest protest against the plainly erroneous opinion avowed in that report, which was presented and accepted during his absence from the State.

By the laws of Massachusetts, the offence is considered as mainly against the person of the mother. In case of her death, already sufficiently provided for at common law, convictions can be effected, with great difficulty, under the statute,—as has twice occurred the present year, in the cases of Jackson and Brown; but hardly otherwise.

† In this connection honorable mention is due Drs. TATUM and JOYNES, of Virginia, for their papers on "The Attributes of the Impregnated Germ," and "Some of the Legal Relations of the Fœtus in Utero" (Virginia Medical Journal, 1856.) Through the agency of the latter of these gentlemen, an important modification has been made in the law of the State; as has also been effected in Wisconsin, by Dr. BRISBANE.

The arguments by which we have shown the mistaken premise on which the common law of England, as covering this crime, is founded, and by adoption, the common law of this country, will not have been forgotten. We shall perceive that similar reasoning applies with equal force to the special statutes, where such exist, of almost every State in the Union.

In the following States, Rhode Island, New Jersey, Pennsylvania, Delaware, Maryland, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Iowa, and the District of Columbia, there appear to exist no statutes against abortion, and the crime can only be reached at common law and by the rulings of the courts.

In the case of the District of Columbia, all rulings are based on the common law, the old English statutes, from Elizabeth to George II., and the old colonial statutes of the Province of Maryland, down to 1800, the period of cession to the United States of that portion of Maryland lying on the north side of the Potomac, now included in the federal district.

The later English statutes, even those of George IV., being enacted subsequent to the separation from the mother country, are not recognized in the District. In the State courts, so far as the rules and principles of the common law are applicable to the administration of criminal law, and have not been altered or modified by acts of the colonial or provincial government, or by the State Legislature, they have the same force and effect as laws formally enacted.† In the States referred to, therefore, as having no special statutes of their own, the later English statutes, though not of absolute force, are to a certain extent undoubtedly acknowledged.

By the common law of England, as stated by Blackstone:—

"If a woman is quick with child, and by a potion or otherwise, killeth it in her womb, or if any one beat her, whereby the child dieth in her body, and she is delivered of a dead child, this, though not murder, was by the ancient law homicide, or manslaughter. But the modern law doth not look upon this offence in quite so atrocious a light, but merely as a heinous misdemeanor."* "But if the child be born alive, and afterwards die in consequence of the potion or beating, it will be murder."†

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* For valuable information in this connection, I am indebted to many friends, more particularly to Drs. THAYER, of New Hampshire, PHELPS, of Vermont, CHAS. HOOKER, of Connecticut, BLATCHFORD, of New York, WOOD, of Pennsylvania, THOMPSON, of Delaware, WROTH, of Maryland, BRAINARD, of Illinois, CAMERON, of Indiana, LELAND, of Michigan, LE BOUTILLIER, of Minnesota, BRISBANE, of Wisconsin, POPE, of Missouri, HOYT, of Tennessee, HAXALL and JOYNES, of Virginia, SEMMES, of District of Columbia, DICKSON, of North Carolina, LOPEZ, of Alabama, BARTON, of Louisiana, (now of South Carolina,) and to my relatives, WOODBURY and BELLAMY STORER, Esqrs., of Maine and Ohio, and JAMES M. KEITH, Esq., of Boston, late District-Attorney for Norfolk and Plymouth Counties. In every instance, however, verification of the statutes has been made from copies in the State Library of Massachusetts.

† DAVIS, Criminal Justice, p. 482.

By this law it is necessary to furnish proof not merely of pregnancy, but of quickening; no one besides the mother can be reached, save in the rare instance of beating; it is often impossible to prove that a child, born living, has died in consequence of means used upon itself or its mother before the birth.

The Ellenborough act,‡ passed in 1803, runs thus:—

"If any person shall willfully and maliciously administer to, or cause to be administered to, or take any medicine, drug, or other substance or thing whatsoever, or use, or cause to be used or employed, any instrument, etc., with intent to procure the miscarriage of any woman, not being, or not being proved to be, quick with child at the time of committing such thing, or using such means, then, and in every such case, the persons so offending, their counselors, aiders and abettors, shall be and are declared guilty of felony, and shall be liable," etc. etc.; if before quickening, to fine, the pillory, stripes, or transportation; if after quickening, to death;—but in the clause providing for the latter case, mention of instruments was omitted.

Punishment was thus extended to the crime prior to quickening; and besides the actual perpetrator, to those counseling and assisting therein. For its commission after quickening, capital punishment was restored; but by a strange oversight, no penalty was provided for the cases occurring at this period, where the abortion was induced by instrumental or other mechanical violence.

To remedy this defect another act, that of Lord Lansdowne,§ was substituted in 1828:—

"If any person, with intent to procure the miscarriage of any woman then being quick with child, unlawfully and maliciously shall administer to her, or cause to be taken by her, any poison or other noxious thing, or shall use any instrument, or other means whatever, with the like intent; every such offender, and every person counseling, aiding or abetting such offender, shall be guilty of felony, and being convicted thereof, shall suffer death as a felon;" if the woman were "not, or not proved to be, then quick with child," the offence was still felony, and punished by transportation, or imprisonment and stripes.

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* 1 Commentaries, 129.

† Ibid.

‡ 43 George III., c. 58.

§ 9 Geo. IV., c. 31; 10 Geo. IV., c. 34.

By this enactment, the mistaken belief in a difference of guilt, according to the period of fœtal life, was still retained. For which reason, and in the false hope that by again abolishing capital punishment, juries would more frequently decide in accordance with fact, the English law has later, and during the present reign, still further been modified and rendered more just, simple, and comprehensive.*

"Whosoever, with the intent to procure the miscarriage of any woman, shall unlawfully administer to her, or cause to be taken by her, any poison or other noxious thing, or shall unlawfully use any instrument, or other means whatsoever, with the like intent, shall be guilty of felony, and being convicted thereof, shall be liable," etc. etc., to transportation or imprisonment.

By the present English statute, the woman herself can hardly yet be reached; many convictions must still be lost from failure to prove the agent either a poison or noxious thing; in other respects, however, it is well drawn. Attempts at the crime are covered, and proof is not required of pregnancy, or of actual injury to the mother.

So far the instances in this country of an absence of special statutes. Where such exist, they may be variously classified. Reserving for a little all other considerations, we find them at once falling into four great divisions.

I. Those acknowledging the crime only after quickening has occurred:—

Connecticut,
Mississippi,
Arkansas,
Minnesota,
Oregon.

II. Those acknowledging the crime throughout pregnancy, but supposing its guilt to vary with the period to which this has advanced:—

Maine,
New Hampshire,
New York,
Ohio,
Michigan.†

III. Those acknowledging the crime throughout pregnancy, unmitigated; but still requiring proof of the existence of this state:—

Vermont,
Massachusetts,
Missouri,
Alabama,

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* 7 William IV.; 1 Vict., c. 85.

† To this list may also be added the Territory of Washington.

Illinois,
Wisconsin,
Virginia,
Louisiana,
Texas,
California.*

IV. That, like the present English statute, requiring no such proof, and punishing also the attempt, even though pregnancy do not exist:—

Indiana.

Briefly to recapitulate these groups:—

Maine,	Class II.	Alabama,	Class III.
New Hampshire,	" II.	Mississippi,	" I.
Vermont,	" III.	Louisiana,	" III.
Massachusetts,	" III.	Texas,	" III.
Rhode Island,	no statute.	Ohio,	Class II.
Connecticut,	Class I.	Indiana,	" IV.
New York,	" II.	Illinois,	" III.
New Jersey,	none.	Michigan,	" II.
Pennsylvania,	none.	Kentucky,	none.
Delaware,	none.	Tennessee,	none.
Maryland,	none.	Missouri,	Class III.
District of Columbia,	none.	Arkansas,	" I.
Virginia,	Class III.	Wisconsin,	Class III.
North Carolina,	none.	Iowa,	none.
South Carolina,	none.	Minnesota,	Class I.
Georgia,	none.	California,	" III.
Florida,	none.	Oregon,	" I.

We now proceed to the consideration of these statutes in detail, and for this purpose, present them at length.

I. States acknowledging the crime only after quickening:—

CONNECTICUT.—"Every person who shall willfully and maliciously administer to, or cause to be administered to, or taken by, any woman then being quick with child, any medicine, drug, noxious substance, or other thing, with intent thereby to produce the miscarriage of such woman, or to destroy the child of which she is pregnant, or shall willfully and maliciously use and employ any instrument or other means to produce such miscarriage, or to destroy such child, shall suffer imprisonment in the Connecticut State prison for a term not less than seven, nor more than ten years."†

MISSISSIPPI.—"The willful killing of an unborn quick child, by any injury to the mother of such child, which would be murder if it resulted in the death of the mother, shall be deemed manslaughter.

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* The Territory of Kansas belongs to the above group.

† Compiled Statutes of Connecticut, 1854, p. 307.

"Every person who shall administer to any woman pregnant with a quick child, any medicine, drug, or substance whatever, or shall use or employ any instrument or other means, with intent thereby to destroy such child, unless the same shall have been necessary to preserve the life of such mother, or shall have been advised by a physician to be necessary for such purpose, shall be deemed guilty of manslaughter."* Punishment, by fine not less than one thousand dollars, or imprisonment in the county jail for not more than one year, or in the penitentiary for not less than two years.

ARKANSAS.—"The willful killing of an unborn quick child, by any injury to the mother of such child, which would be murder if it resulted in the death of such mother, shall be adjudged manslaughter.

"Every person who shall administer to any woman pregnant with a quick child, any medicine, drug, or substance whatever, or shall employ any instrument or other means, with intent thereby to destroy such child, and thereby shall cause its death, unless the same shall be necessary to preserve the life of the mother, or shall have been advised by a regular physician to be necessary for such purpose, shall be deemed guilty of manslaughter."†

MINNESOTA.—"The willful killing of an unborn infant child, by any injury to the mother of such child, which would be murder if it resulted in the death of such mother, shall be deemed manslaughter in the first degree.

"Every person who shall administer to any woman pregnant with a quick child, any medicine, drug, or substance whatever, or shall use or employ any instrument or other means, with intent thereby to destroy such child, unless the same shall have been necessary to preserve the life of such mother, or shall have been advised by two physicians to be necessary for such purpose, shall, in case the death of such child or of such mother be thereby produced, be deemed guilty of manslaughter in the second degree."‡ Punishment for first degree, imprisonment in the territorial prison for not less than seven years; and for second degree, not more than seven years nor less than four.

OREGON.—"Any person who shall administer to any woman pregnant with a quick child, or prescribe for any such woman, or advise or procure any such woman to take any medicine, drug, or substance whatever, or shall use or employ any instrument or other means, with intent thereby to destroy such child, unless the same shall have been necessary to preserve the life of such mother, shall, in case the death of such child, or of such mother, be thereby produced, be deemed guilty of manslaughter."* Punishment, imprisonment in the penitentiary for not less than one or more than ten years, and by fine not exceeding five thousand dollars.

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* Revised Code of Mississippi, 1857, chap. 64, p. 601.

† Digest of Statutes of Arkansas, 1848, chap. 51, p. 325.

‡ Revised Statutes of Minnesota, 1851, chap. 100, p. 493.

II. Those acknowledging the crime throughout pregnancy, but as of different degrees of guilt:—

MAINE.—"Whoever administers to any woman pregnant with child, whether such child is quick or not, any medicine, drug, or other substance, or uses any instrument or other means, unless the same were done as necessary for the preservation of the mother's life, shall be punished, if done with intent to destroy such child, and thereby it was destroyed before birth, by imprisonment not more than five years, or by fine not exceeding one thousand dollars; if done with intent to procure the miscarriage of such woman, by imprisonment less (*sic*) than one year, and by fine not exceeding one thousand dollars."†

NEW HAMPSHIRE.—"Every person who shall willfully administer to any pregnant woman, any medicine, drug, substance, or thing whatever, or shall use or employ any instrument or means whatever, with intent thereby to procure the miscarriage of any such woman, unless the same shall have been necessary to preserve the life of such woman, or shall have been advised by two physicians to be necessary for that purpose, shall, upon conviction, be punished by imprisonment in the county jail not more than one year, or by a fine not exceeding one thousand dollars, or by both such fine and imprisonment, at the discretion of the court.

"Every person who shall administer to any woman pregnant with a quick child, any medicine, drug, or substance whatever, or shall use or employ any instrument or means whatever, with intent thereby to destroy such child, unless the same shall have been necessary to preserve the life of such woman, or shall have been advised by two physicians to be necessary for such purpose, shall, upon conviction, be punished by fine not exceeding one thousand dollars, and by confinement to hard labor not less than one year nor more than ten years.

"Any person who shall cause the death of any pregnant woman, in the perpetration or attempt to perpetrate either of the crimes mentioned in the two preceding sections, or in consequence of the perpetration or the attempt to perpetrate either of said crimes, shall be taken and deemed to be guilty of murder in the second degree, and be punished accordingly.

"Any woman who shall voluntarily submit to the violation of the provisions of this act (this and the three preceding sections‡) upon herself, shall be punished by imprisonment in the county jail not exceeding one year, or by fine not exceeding one thousand dollars, or by both said fine and imprisonment, at the discretion of the court."*

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* Statutes of Oregon, 1855, chap. 3, p. 310.

† Revised Statutes of Maine, 1857, chap. 124, p. 685.

‡ The above should evidently read "the first two sections," to be possible.

NEW YORK.—"The willful killing of an unborn quick child, by an injury to the mother of such child, which would be murder if it resulted in the death of such mother, shall be deemed manslaughter in the first degree.

"Every person who shall administer to any woman pregnant with a quick child, or prescribe for any such woman, or advise or procure any such woman to take any medicine, drug, or substance whatever, or shall use or employ any instrument or other means, with intent thereby to destroy such child, unless the same shall have been necessary to preserve the life of such mother, shall, in case the death of such child, or of such mother be thereby produced, be deemed guilty of manslaughter in the second degree.

"Every person who shall administer to any pregnant woman, or prescribe for any such woman, or advise or procure any such woman to take any medicine, drug, substance, or thing whatever, or shall use or employ any instrument, or other means whatever, with intent thereby to procure the miscarriage of any such woman, shall, upon conviction, be punished by imprisonment in a county jail not less than three months nor more than one year.

"Every woman who shall solicit of any person any medicine, drug, or substance, or thing whatever, and shall take the same, or shall submit to any operation, or other means whatever, with intent thereby to procure a miscarriage, shall be deemed guilty of a misdemeanor, and shall, upon conviction, be punished by imprisonment in the county jail not less than three months nor more than one year, or by a fine not exceeding one thousand dollars, or by both such fine and imprisonment."†

OHIO.—"Any physician, or other person, who shall willfully administer to any pregnant woman, any medicine, drug, substance, or thing whatever, or shall use any instrument, or other means whatever, with intent thereby to procure the miscarriage of any such woman, unless the same shall have been necessary to preserve the life of such woman, or shall have been advised by two physicians to be necessary for that purpose, shall, upon conviction, be punished by imprisonment in the county jail not more than one year, or by fine not exceeding five hundred dollars, or by both such fine and imprisonment.

"Any physician, or other person, who shall administer to any woman, pregnant with a quick child, any medicine, drug, or substance whatever, or shall use or employ any instrument, or other means, with intent thereby to destroy such child, unless the same shall have been necessary to preserve the life of such mother, or shall have been advised by two physicians to be necessary for such purpose, shall, in case of the death of such child or mother, in consequence thereof, be deemed guilty of a high misdemeanor, and upon conviction thereof, shall be imprisoned in the penitentiary not more than seven years, nor less than one year."*

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* Compiled Statutes of New Hampshire, 1853, chap. 227, p. 544.

† Revised Statutes of New York, 1852, ii. pp. 847, 876. The last section of this statute does not require proof of pregnancy.

MICHIGAN.—"The willful killing of an unborn quick child, by any injury to the mother of such child, which would be murder if it resulted in the death of such mother, shall be deemed manslaughter.

"Every person who shall administer to any woman pregnant with a quick child, any medicine, drug, or substance whatever, or shall use or employ any instrument, or other means, with intent thereby to destroy such child, unless the same shall have been necessary to preserve the life of such mother, or shall have been advised by two physicians to be necessary for such purpose, shall, in case the death of such child or of such mother be thereby produced, be deemed guilty of manslaughter.

"Every person who shall willfully administer to any pregnant woman, any medicine, drug, substance, or thing whatever, or shall employ any instrument, or other means whatever, with intent thereby to procure the miscarriage of any such woman, unless the same shall have been necessary to preserve the life of such woman, or shall have been advised by two physicians to be necessary for that purpose, shall, upon conviction, be punished by imprisonment in a county jail not more than one year, or by a fine not exceeding five hundred dollars, or by both such fine and imprisonment."†

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* Revised Statutes of Ohio, 1854, chap. 162, p. 296.

† Compiled Laws of Michigan, 1857, vol. ii. chap. 180, p. 1509. The statute of the Territory of WASHINGTON is very similar to those above.

"Every person who shall administer to any woman pregnant with a quick child, any medicine, drug, or substance whatever, or shall use or employ any instrument, or other means, with intent thereby to destroy such child, unless the same shall have been necessary to preserve the life of such mother, shall, in case the death of such child or of such mother be thereby produced, on conviction thereof, be imprisoned in the penitentiary not more than twenty years, nor less than one year.

"Every person who shall administer to any pregnant woman, or to any woman whom he supposes to be pregnant, any medicine, drug, or substance whatever, or shall use or employ any instrument, or other means, thereby to procure the miscarriage of such woman, unless the same is necessary to preserve her life, shall, on conviction thereof, be imprisoned in the penitentiary not more than five years, nor less than one year, or be imprisoned in the county jail not more than twelve months, nor less than one month, and be fined in any sum not exceeding one thousand dollars." Statutes of the Territory of Washington, 1855, p. 81.

III. Those not allowing this mitigation, but still requiring proof of pregnancy:—

VERMONT.—"Whoever maliciously, or without lawful justification, with intent to cause and procure the miscarriage of a woman, then pregnant with child, shall administer to her, prescribe for her, or advise or direct her to take or swallow any poison, drug, medicine, or noxious thing, or shall cause, or procure her, with like intent, to take or swallow any poison, drug, medicine, or noxious thing; and whoever maliciously and without lawful justification, shall use any instrument, or means whatever, with the like intent, and every person, with the like intent, knowingly aiding and assisting such offenders, shall be deemed guilty of felony, if the woman die in consequence thereof, and shall be imprisoned in the State prison not more than ten years, nor less than five years; and if the woman does not die in consequence thereof, such offenders shall be deemed guilty of a misdemeanor, and shall be punished by imprisonment in the State prison not exceeding three years, nor less than one year, and pay a fine not exceeding two hundred dollars."*

MASSACHUSETTS.—"Whoever maliciously or without lawful justification, with intent to cause and procure the miscarriage of a woman then pregnant with child, shall administer to her, prescribe for her, or advise or direct her to take or swallow any poison, drug, medicine, or noxious thing, or shall cause or procure her, with like intent, to take or swallow any poison, drug, medicine, or noxious thing; and whoever maliciously and without lawful justification shall use any instrument, or means whatever, with the like intent, and every person with the like intent knowingly aiding and assisting such offender or offenders, shall be deemed guilty of felony, if the woman die in consequence thereof, and shall be imprisoned not more than twenty years, nor less than five years, in the State prison; and if the woman doth not die in consequence thereof, such offender shall be guilty of a misdemeanor, and shall be punished by imprisonment not exceeding seven years, nor less than one year, in the State prison, or house of correction, or common jail, and by fine not exceeding two thousand dollars."†

ILLINOIS.—"Every person who shall administer, or cause to be administered or taken, any noxious or destructive poison, substance, or liquid, with the intention to procure the miscarriage of any woman then being with child, and shall thereof be duly convicted, shall be imprisoned for a term not exceeding three years in the penitentiary, and fined in a sum not exceeding one thousand dollars."‡

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* Compiled Statutes of Vermont, 1850, chap. 108, p. 560.

† Supplement to the Revised Statutes of Massachusetts, 1849, p. 322.

‡ Statutes of Illinois, 1858, vol. i. p. 381.

WISCONSIN.—"Every person who shall administer to any pregnant woman, or prescribe for any such woman, or advise or procure any such woman to take any medicine, drug, or substance, or thing whatever, or shall use or employ any instrument, or other means whatever, or advise or procure the same to be used, with intent thereby to procure the miscarriage of any such woman, shall, upon conviction, be punished by imprisonment in a county jail, not more than one year nor less than three months, or by fine not exceeding five hundred dollars, or by both fine and imprisonment, at the discretion of the court.

"Every woman who shall take any medicine, drug, substance, or thing whatever, or who shall use or employ any instrument, or shall submit to any operation, or other means whatever, with intent to procure a miscarriage, shall, upon conviction, be punished by imprisonment in a county jail not more than six months, nor less than one month, or by a fine not exceeding three hundred dollars, or by both fine and imprisonment, at the discretion of the court."*

VIRGINIA.—"Any free person who shall administer to, or cause to be taken by a woman, any drug or other thing, or use any means, with intent to destroy her unborn child, or to produce abortion or miscarriage, and shall thereby destroy such child, or produce such abortion or miscarriage, shall be confined in the penitentiary not less than one, nor more than five years. No person, by reason of any act mentioned in this section, shall be punishable where such act is done in good faith, with the intention of saving the life of such woman or child."†

MISSOURI.—"Every physician, or other person, who shall willfully administer to any pregnant woman, any medicine, drug, or substance whatsoever, or shall use or employ any means whatsoever, with intent thereby to procure abortion, or the miscarriage of any such woman, unless the same shall have been necessary to preserve the life of such woman, or shall have been advised by a physician to be necessary for that purpose, shall, upon conviction, be adjudged guilty of a misdemeanor, and punished by imprisonment in the county jail not exceeding one year, or by fine not exceeding five hundred dollars, or by both such fine and imprisonment."‡

ALABAMA.—"Any person who willfully administers to any pregnant woman, any drug or substance, or uses and employs any instrument or other means to procure her miscarriage, unless the same is necessary to preserve her life, and done for that purpose, must, on conviction, be fined not more than five hundred dollars, and imprisoned not less than three or more than twelve months."*

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* Revised Statutes of Wisconsin, 1858, chap. 169, sect. 58. It will be noticed that the second section of the above statute differs from the first, in not requiring the proof of pregnancy.

† Code of Virginia, 1849, chap. 191, p. 724.

‡ Revised Statutes of Missouri, 1856, i. chap. 50, p. 567.

LOUISIANA.—"Whoever shall feloniously administer, or cause to be administered, any drug, potion, or any other thing, to any woman, for the purpose of procuring a premature delivery, and whoever shall administer, or cause to be administered, to any woman pregnant with child, any drug, potion, or any other thing, for the purpose of procuring abortion, or a premature delivery, shall be imprisoned at hard labor for not less than one, nor more than ten years."†

TEXAS.—"If any person shall designedly administer to a pregnant woman, with her consent, any drug or medicine, or shall use toward her any violence, or any means whatever, externally or internally applied, and shall thereby procure an abortion, he shall be punished by confinement in the penitentiary not less than two, nor more than five years; if it be done without her consent the punishment shall be doubled.

"Any person who furnishes the means for procuring an abortion, knowing the purpose intended, is guilty as an accomplice.

"If the means used shall fail to produce an abortion, the offender is nevertheless guilty of an attempt to procure abortion, provided it be shown that such means were calculated to produce that result, and shall receive one half the punishment prescribed.

"If the death of the mother is occasioned by an abortion so produced, or by an attempt to effect the same, it is murder.

"If any person shall, during parturition of the mother, destroy the vitality or life in a child, which child would otherwise have been born alive, he shall be punished by confinement in the penitentiary for life, or any period not less than five years, at the discretion of the jury.‡

"Nothing contained in this chapter shall be deemed to apply to the case of an abortion procured or attempted to be procured by medical advice for the purpose of saving the life of the mother."§

CALIFORNIA.—"Every person who shall administer or cause to be administered or taken, any medicinal substance, or shall use, or cause to be used, any instrument whatever, with the intention to procure the miscarriage of any woman then being with child, and shall be thereof duly convicted, shall be punished by imprisonment in the State prison for a term not less than two years, nor more than five years; provided, that no physician shall be affected by this section, who, in the discharge of his professional duties, deems it necessary to produce the miscarriage of any woman in order to save her life."*

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* Code of Alabama, 1852, sect. 3230, p. 582.

† Revised Statutes of Louisiana, 1856, p. 138. By its wording, this statute might be forced into the next division.

‡ I insert this clause not merely for its relation to the points we are now considering, but for its important bearing on the broad question of infanticide during labor; concerning which it stands in bold and direct antagonism to all the rulings of the common law in this country and abroad. In other respects also, though not faultless, the Texas statute is rationally and admirably drawn.

§ Penal Code of Texas, 1857, p. 103.

IV. The State, like England, where proof of pregnancy is not required:†

INDIANA.—"Every person who shall willfully administer to any pregnant woman, or to any woman whom he supposes to be pregnant, anything whatever, or shall employ any means with intent thereby to procure the miscarriage of such woman, unless the same is necessary to preserve her life, shall be punished by imprisonment in the county jail not exceeding twelve months, and be fined not exceeding five hundred dollars."‡

The impossibility of proving the existence of pregnancy, in all cases of early occurring, and in many of advanced abortion, save by its result, is undeniable. Quickening, where abortion is criminal, is seldom previously ascertained by witnesses, at least from actual examination. If the mother is dead, her own testimony, not often willingly given, is lost, and the only reliable evidence that the usual period of quickening had been reached, is from the body of the fœtus, frequently concealed or destroyed. The law requires, in proof of the existence of quickening, that the woman should herself have felt the child move within her;§

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* Digest of Laws of California, 1857, art. 1905, p. 334. The statute of the Territory of KANSAS, similar to the above, is as follows:—

"Every physician or other person who shall willfully administer to any pregnant woman, any medicine, drug, or substance whatever, or shall use or employ any instrument or means whatsoever, with intent thereby to procure abortion, or the miscarriage of any such woman, unless the same shall have been necessary to preserve the life of such woman, or shall have been advised by a physician to be necessary for that purpose, shall, upon conviction, be adjudged guilty of a misdemeanor, and punished by imprisonment in a county jail not exceeding one year, or by fine not exceeding five hundred dollars, or by both such fine and imprisonment." Statutes of Kansas, 1855, chap. 48, p. 243.

† We have already commented upon the phraseology of the Louisiana statute. The latitude of its first clause is shown by the context to have been unintentional, and therefore hardly justifies a change in its classification. The second section of the Statute of Washington Territory, however, is closely analogous to that now given; while the final sections of the statutes both of New York and Wisconsin, which make it penal for a woman voluntarily to effect or submit to the unjustifiable induction of abortion, are equally silent regarding proof of the existence of pregnancy.

‡ Revised Statutes of Indiana, 1852, p. 437.

§ Rex *vs.* Phillips, 3 CAMPBELL, 77; RUSSELL, Crim. Law, 553–4; 1 GABBETT, Crim. Law, 522; 1 BISHOP, Crim. Law, 386.

thus discarding* the distinction once very properly made by a learned judge, "Quick with child, is having conceived; with quick child, is where the child is quickened."†

We have already sufficiently insisted on the error, injustice, and actual wrong to society, of making this absurd distinction between the fœtus of an early and a later age, and only refer to it at the present time as foremost among the existing obstacles to conviction.

In some of the States, the offence is considered a trifling one, except as affecting the person or life of the mother; this is the case in New Hampshire, Vermont, and Massachusetts. In Ohio, Michigan, Minnesota, Wisconsin, and Oregon, the proved death of either child or mother is required to make abortion a high misdemeanor, felony or manslaughter; while in Virginia and Arkansas it is necessary to constitute an indictable offence, in the one State that the death of the child should be proved, and in the other that this or its premature discharge has actually taken place. An attempt at the crime would here seem beyond indictment, unless fœtal life were destroyed; though if this could be proved, the attempt might perhaps be reached, even though the fœtus were retained in utero, and a true abortion, its discharge, had not taken place. In Maine, the fœtus must have died before birth; if, born living, it yet die in consequence of the abortion, the crime would seem not indictable, save at common law. In other States, allowing the fact of pregnancy to be proved, and in Indiana alone this is not necessary, attempts at abortion are as indictable as the act consummated, save in Texas, where the means used must be shown to be such as "were calculated to produce the result."

In but few instances is the crime, intrinsically considered, accounted a heinous one, and recognized in its true character—an attempt to destroy the life of the child. In Texas, the consent of the mother half palliates the crime; while in very many codes abortion is omitted from the list of offences against the person, and accounted only a breach of public decency and morality.

In Ohio, as we have seen, it is called a high misdemeanor; in New York, Michigan, Oregon, Arkansas, and Mississippi, it is styled manslaughter in the first degree. The punishment inflicted by the latter of these States, however, is ridiculously trivial, and in all of them proof of quickening is required. In New York it has been determined that under an indictment for procuring the abortion of a quick child, which by the revised statutes is a felony, the prisoner may be convicted, though it turn out that the child was not quick, and the offence therefore a mere misdemeanor;* as in the remaining States it is indeed either in name or by penalty considered,—a simple, trivial, and venial offence.

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* State *vs.* Cooper, 2 ZABRISKIE, 52, 57; Rex *vs.* Russell, 1 MOODY, 356, 360.

† Regina *vs.* Wycherley, 8 CARRINGTON and PAYNE, 265.

But it must not be forgotten that the true nature of manslaughter consists in the absence of all malice or willful intent, expressed or implied, to do personal injury: out of tenderness to the frailty of human nature,† the law mercifully denying to such homicide, from unlawful accident or hasty passion, the same degree of guilt with the cool, deliberate act;‡ nor that misdemeanors are specifically confined to the following category: disturbances of the public peace, trivial personal injuries, public nuisances and scandals, lewdness, and incentives to special crimes.§ It is evident that under neither of these heads can the crime of abortion be properly made to fall.

Difficulties of conviction, similar to those we have seen obtaining in England, and arising from requirement of proof that the means employed are unlawful, also present themselves in several of our States, though in most they have been wisely avoided. In Vermont and Massachusetts the agent administered, to be indictable, must have been a "poison, drug, medicine, or noxious thing;" in Illinois, a "poison, noxious, or destructive substance, or liquid;" in Texas, a "drug or medicine;" and in California, a "medicinal substance." In Maine, New Hampshire, Connecticut, New York, Ohio, Michigan, Minnesota, Wisconsin, Oregon, Virginia, Missouri, Arkansas, Alabama, Mississippi, and Louisiana, the wording of the statute is sufficiently comprehensive; while in Indiana, there is used the curt but significant expression "anything whatever," it not being necessary under this statute, in an indictment for administering medicine or any other substance, to procure abortion, for the agent to be described as noxious, or even its name to be stated.|| The use of instrumental and other violence is generally well provided against.

The truth is, as has indeed been ruled, that it should not be necessary to show, in pleading or evidence, that the drug, etc. administered is noxious or the like, the intent to procure abortion being the gist of the attempt;¶ and if a person administer a bit of bread merely, with this intent, it is sufficient to constitute the offence.** On the other hand, it has been laid down, that if the thing administered could of itself by no possi-

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* The People *vs.* Jackson, 3 HILL, N. Y. Reports, 92; WHARTON, Criminal Law, 98.

† DAVIS, Crim. Justice, 484.

‡ WHARTON, Amer. Crim. Law, 424.

§ WHARTON, Amer. Crim. Law, 75.

|| The State *vs.* Vawter, 7 BLACKFORD, 592.

¶ 1 GABBETT, Crim. Law, 523; ARCHBOLD, P. A., lxx, 2.

** ROSCOE, L. E., 242; Eng. Com. L. Rep., xxv. 453; Rex *vs.* Coe, 6 CAR. & P., 403; Vaughan, 13.

bility produce the abortion, and it were proved that this fact were known to the person administering, the crime would not have been committed; on the ground that he must be presumed to have acted without the malicious intent which the law requires.* Here, however, the frequent and important physiological effect through the imagination, in producing a definite result where such is supposed to be intended, has been entirely forgotten.

In several States, a seemingly unwise discrimination has been made by the law between the various methods employed. Thus in Michigan, Mississippi, Arkansas, and Minnesota, a special statute has been enacted for cases where the crime is effected "by any injury to the mother, which would be murder if it resulted in the death of such mother." We have seen that the surest and most efficient means of producing abortion are those where no injury whatever is necessarily inflicted upon the mother. Such statutes as the above, therefore, actually tend to encourage the crime.

Another important obstacle to conviction is found in the latitude the statutes allow, generally by omission, to the plea of justification.

In Illinois and Louisiana no justification whatever is allowed by the law. In Connecticut the offence is penal where committed "willfully and maliciously;" in Vermont and Massachusetts to the latter of these expressions are added the words, "or without lawful justification:" but in each case, decision upon this point is left in great measure or wholly to the court. In Virginia, to be allowable, the abortion must have been necessary for the life of either the mother or child. In Maine, New Hampshire, Massachusetts,† New York, Ohio, Indiana, Michigan, Missouri, Alabama, Mississippi, Arkansas, Texas, Minnesota, California, Oregon, and the Territories of Kansas and Washington, it must have been performed for the sake of the mother's life alone.

In none of these States is a standard of such justification established by the statute. In Maine, New York, Indiana, Alabama, Oregon, and the Territory of Washington, this is not even attempted. In Texas, the statute acknowledges "medical advice." In Missouri, Mississippi, California, and the Territory of Kansas, the sanction of "a physician" is allowed as excuse; in Arkansas that of "a regular physician;" in New Hampshire, Ohio, Michigan, and Minnesota, "two physicians" may decide on its necessity; but in every one of these States, the word "or" stands engrossed upon the statute, and thereby the precaution is practically invalidated; which could not have been the case had the word "and" have been used instead.

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* 1 BISHOP, Crim. Law, 527.

† In Massachusetts, though the statute is silent on these points, it is asserted that whenever a potion is given, or other means are used, by "a surgeon," for the purpose of saving the life of the woman, the case is free of malice, and has a lawful justification. DAVIS, Crim. Justice, 282; Report of the Criminal Law Commissioners, 1844, Causing Abortion, I., note *a*.

The truth is, as we have seen, that when such latitude is allowed by the law, it is inevitably abused. Medical evidence, medical sanction, and medical performance are absolutely essential for excuse in every case; if the opinion of a single physician is allowed to be sufficient, an escape is afforded for all instances where this privilege has been dishonored; the word "regular" is much more liable to be misinterpreted than the word "competent;"* in every case before abortion can be justified, its necessity should previously have been decided and the possibility of crime thus prevented, by a consultation of at least two competent medical men.

We have pointed out many circumstances under which premature labor is demanded, by the rules of humanity and of medicine, for the sake of the mother's life, and have seen that in several States it is for this cause allowed. But we have also shown that it is often equally necessitated for the sake of the child. In no State save Virginia is its justifiability for this purpose yet recognized by the statute law.

By the codes of most States, the mother is not punishable, however directly implicated in the crime. New Hampshire, New York, and Wisconsin, are apparently the only exceptions to this statement; the last two of them also not requiring proof of pregnancy for conviction, while by implication New Hampshire does.

By the statute of Indiana, all other women equally with the mother would seem released from prosecution, the word "he" being used of the persons indictable. The same oversight is noticed in the first section of the statute of Texas.

Objections were formerly made, especially in England, to the severity of the penalties then inflicted, (death in case of quickening, transportation or long imprisonment otherwise,) on the erroneous ground that this severity was wholly disproportionate to the guilt of the offence, and that, therefore, juries did not convict. The mistaken character of this supposition is shown by abundant proof in this country. In many States the penalties of the law are absurdly insignificant, tending, equally with the uncertainty of their infliction, to encourage the crime, and yet the same difficulties of conviction prevail. The true nature of these difficulties we have endeavored in great measure to explain, and we think it will have appeared that however numerous and serious they may be, they are yet not insuperable.

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* After a little reflection, it will be seen that this word is not so open to objection as might at first be supposed.

Before concluding this subject, it is proper that we examine more fully into the doctrine of the common law, to understand more precisely its meaning. In so doing, we shall quote freely from the leading authorities of the day, especially those of this country.

The destruction of an unborn child is not at the present day murder at the common law, though such was formerly the case;* to constitute which crime, the person killed must at the time of death have been alive,† as we have shown the fœtus to be from the time of conception, and "a reasonable creature in being,"‡ a quality in this connection denied to the child by the law, though in all other relations it inconsistently allows and affirms it; as it does also, and always, from the moment of birth, even though the funis is undivided and the placenta still attached.§

To cause abortion after quickening, is not, as such, murder or manslaughter at common law, but a high misdemeanor.||

Whether to cause, or to attempt, abortion before quickening is a penal offence at common law, has been differently decided. In several of the States, as Maine, Massachusetts, and New Jersey, it has been ruled by the Supreme Court not to be indictable, even as an assault, if done with the consent of the woman; on the ground that only in case of high crimes is the person assaulted incapable of assenting.¶ The Pennsylvania court, however, has discarded this doctrine, and has decided that the moment the womb is instinct with embryo life, and gestation has begun, the crime may be perpetrated.**

The distinction alluded to with regard to quickening, is allowed by an acknowledged legal authority†† to be at open variance not only with medical experience, but with all other principles of the common law.‡‡ The civil rights of an infant in utero are respected equally throughout gestation; at every stage of which process, no matter how early, it may

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* 1 RUSSELL, Crimes, 671; 1 VESEY, 86; 3 COKE, Inst., 50; 1 HAWKINS, C. B., s. 16; 1 HALE, 434; 1 EAST, P. C., 90; 3 CHITTY, Crim. Law, 798; WHARTON, Crim. Law, 537.

† DAVIS, Crim. Justice, 486.

‡ ARCHBOLD, Crim. Pleading, 490.

§ Regina *vs.* Trilloe, 2 MOODY, C. C., 260, 413.

|| The State *vs.* Cooper, 2 ZABRISKIE, 52; HANES, U. S. Digest, 5.

¶ The Commonwealth *vs.* Parker, 9 METCALF, 263; The Commonwealth *vs.* Bangs, 9 Mass., 387; The State *vs.* Cooper, 2 ZABRISKIE, 57; HANES, U. S. Digest, 5; Smith *vs.* State, 33 MAINE, (3 RED.) 48.

** BISHOP, Crim. Law, 386; Mills *vs.* The Commonw., 1 HARRIS, Pa., 631, 633.

†† WHARTON, Crim. Law of the U. S., 537.

‡‡ 1 RUSSELL, Crimes, 661; 1 VESEY, 86; 3 COKE, Inst., 50; 1 HAWKINS, c. 13 s. 16; BRACTON, l. 3, c. 21.

be appointed executor,[*] is capable of taking as legatee[†] or under a marriage settlement,[‡] may take specifically as "a child" under a general devise,[§] and may obtain an injunction to stay waste.[||]

When, in an attempt to procure an abortion, there is an evident intent to produce the death of the mother, and her death does actually occur, such attempt becomes murder at common law;[¶] but when nothing more is intended than to commit the misdemeanor, it is only manslaughter,[**] being an instance of homicide from individual malice toward a third party, when the fatal blow falls on the deceased by mistake. It has been said, however, that this last is not the true doctrine, the destruction of an infant in utero being, even at common law, in some respects felonious, and the act in its nature malicious and deliberate, and necessarily attended with danger to the person on whom it is performed.[††]

The use of violence upon a woman, with an attempt to produce her miscarriage without her consent, rules Chief Justice Shaw, of Massachusetts, is an assault highly aggravated by such wicked purpose, and would be indictable at common law. So where, upon a similar attempt, the death of the mother ensues, the party making such an attempt, with or without her consent, is guilty of murder, on the ground that it is an act done without lawful purpose, dangerous to life, and that the consent of the woman cannot take away the imputation of malice, any more than in case of a duel, where in like manner there is the consent of the parties.[‡‡]

Though to kill the fœtus in utero is as such, by the common law, no murder, yet if it be born alive, and die subsequently to birth from the wounds it received in the womb, or from the means used to expel it, the offence becomes murder in those who cause or employ them.[§§] If a person, intending to procure abortion, does an act which causes the child to be born earlier than its natural time, and therefore in a state much less capable of living, and it afterwards die in consequence of such premature exposure, the person who by this misconduct brings the child into the world, and puts it into a situation in which it cannot live, is guilty of murder, though no direct injury to the child be proved; and the mere existence of a possibility that something might have been done to prevent the death, does not lessen the crime.*

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[*] BAC. Ab., tit. Infants.

[†] 2 VERNON, 710.

[‡] Doe *vs.* Clark, 2 H. Bl., 399; 2 VESEY, jr., 673; Thellusson *vs.* Woodford, 4 VESEY, 340; Swift *vs.* Duffield, 6 SERG. & RAWLE, 38.

[§] FEARNE, 429.

[||] 2 VERNON, 710; The Commonwealth *vs.* Demain, 6 Penn. Law Journ., 29; BRIGHTLY, 441.

[¶] 1 HALE, 90; The Commonw. *vs.* Chauncey, 1 ASHMEAD, 227; Smith *vs.* State, 33 MAINE, (3 RED.) 48.

[**] Ibid.; HANES, U. S. Digest, 5.

[††] WHARTON, Law of Homicide, 44.

[‡‡] The Commonw. *vs.* Parker, 9 METCALF, 263, 265; DAVIS, Crim. Justice, 281.

[§§] 1 BLACKSTONE, 129; Rex *vs.* Senior, 1 MOODY, C. C., 346; 3 Inst., 50; WHARTON, C. L., 537; Ibid., Law of Homicide, 93.

The earlier English statutes, from their peculiar phraseology, held pregnancy essential for the commission of the crime,† yet an attempt to produce abortion is now indictable at common law,‡ though it fail by reason of the woman being, in fact and contrary to the belief of the party, not pregnant.§ For though as no man would attempt what he absolutely knew he could not in fact perform, nor would be deemed in law to have so attempted, and as every one being conclusively presumed to understand the law, no man can legally intend what is legally impossible, the rule as to facts is different; for men are not conclusively held by the law to know facts. And if a man fails in what he undertakes, because of an impossibility in fact, which he did not know, he is just as answerable as if the failure were from any other cause.||

We have seen the mistaken basis, as regards the criminality of abortion, on which the common law is founded, and that while it recognizes the distinct existence of the fœtus for civil purposes, it here considers its being as totally engrossed in that of the mother.

A recent authority thus accounts for and defends the mistake. The wealth and prosperity of the country, it is assumed, and the growth and efficiency of its population, are alike matters of general concern, and therefore the law takes them under its care. As to population, there are in civil jurisprudence such rules, as that the husband may hold the lands of his deceased wife during his life, if before her death a living child was born, but not otherwise; the law thus offering, in effect, a reward for issue. It does not compel matrimony, because that would be an infringement of private rights; but for the same end, it does punish abortions.¶

Another writer has also implied that the common law, in making fœticide penal, had in view the great mischiefs which would result from even its qualified toleration: namely, the removal of the chief restraint upon illicit intercourse, and the shocks which would be sustained thereby

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* Rex *vs.* West, 2 CARR. & KIR., 784; 1 BISHOP, C. L., 255; WHARTON, Law of Homicide, 93.

† Rex *vs.* Scudder, 1 MOODY, 216, 3 CAR. & P., 605, overruling Rex *vs.* Phillips, 3 CAMPBELL, 73; RUSSELL, Cr., 763, note.

‡ If made without her consent?

§ Regina *vs.* Goodchild, 2 CAR. & KIR., 293; Rex *vs.* Goodhall, 1 DEN. C. C., 187; 3 CAMPBELL, 76.

|| 1 BISHOP, Crim. Law, 518.

¶ Ibid., 385.

by the institution of marriage and its incidents; among which the delicacy of women.*

In unison with these opinions, Judge Coulter, of Pennsylvania, has ruled, that "it is not the murder of a living child which constitutes the offence, but the destruction of gestation."†

If our previous assumptions of the actual character of criminal abortion be granted, and we believe that they have been proved to a demonstration, it must follow from the subsequent remarks that the common law, both in theory and in practice, is insufficient to control the crime; that in many States of this Union, the statutory laws do not recognize its true nature; that they draw unwarrantable distinctions of guilt; that they are not sufficiently comprehensive, directly allowing many criminals to escape, permitting unconsummated attempts, and improperly discriminating between the measures employed; that they require proofs often unnecessary or impossible to afford; that they neglect to establish a standard of justification, and thereby sanction many clear instances of the crime; that by a system of punishments wholly incommensurate with those inflicted for all other offences whatsoever, they thus encourage instead of preventing its increase; and that in many respects they are at variance, not merely with equity and abstract justice, but with the fundamental principles of law itself.

"It is to be hoped," has forcibly been written, "that the period is not far remote, when laws so cruel in their effects, so inconsistent with the progress of knowledge and civilization, and so revolting to the feelings and claims of humanity, will be swept from our statutes."‡

In a similar trust, it now behooves us to consider whether, and in what manner, the difficulties in the way of generally suppressing the crime of abortion can be overcome.

[TO BE CONCLUDED.]

ART. II.—*Gangrene of the Lung, resulting from a Foreign Substance lodged in the Right Bronchial Tube, and terminating in Empyema, and Perforation through the Diaphragm and into the Colon. Final Expulsion of the Body and Recovery of the Patient.* By E. J. FOUNTAIN, M.D., of Davenport, Iowa.

THE following case presents a series of phenomena of a very rare, if not unprecedented occurrence, resulting from a foreign body in the lungs. I was called on the 29th of November, 1858, to see the patient, Alexander Barrow, an interesting lad, ten years of age, whose health had been generally very good, though of a delicate constitution. I found him laboring under a severe cough, of a dry, hoarse, and resonant character, occurring in frequent paroxysms, and unattended with any expectoration. On placing the patient in an upright position, to remove his garments, for the purpose of examining his chest, symptoms of fainting appeared, requiring an immediate resort to the recumbent position. This induced me to remark that his difficulty must be of a serious character, but I could not as yet even guess at its nature. I proceeded carefully to examine his chest, the first result of which increased the mystery of his case. Everywhere over the left lung the respiratory murmur was clear and distinct, and entirely free from the slightest crepitation or the least symptom of disorder. The upper lobe of the right lung appeared equally healthy, but in the middle and lower part there was an entire absence of all respiratory sounds. There was an appreciable degree of dullness over all this region, but more marked anteriorly, and pain was felt on percussion at a single point near the margin of the fourth rib, a little to the right of the sternum. I now inquired more particularly into the history of the cough, and learned that it had existed since he was suddenly taken with a violent paroxysm of coughing at the dinner-table, on the nineteenth of the same month, ten days before coming under my observation. This gave me a clue as to the nature of his difficulty, and I inquired very particularly concerning the circumstances relating to this occurrence. The patient stated that he had bitten off the round head of the thigh-bone of a chicken, and at the moment of doing this he became strangled by some crumbs of corn-bread which he also had in his mouth at the same time, and with the first effort of coughing the bone was drawn into his throat. This was followed by a long and violent paroxysm of coughing; during the remainder of the day it continued most of the time, and in the intervals his breathing was accompanied with a hoarse, croupy sound. The cough had continued unremittingly from that period, yet, very singularly, it had excited no suspicion in the minds of his parents of the probability or danger of the bone having entered the trachea. The suddenness of the attack, with the circumstances related, taken in connection with the symptoms revealed by auscultation, immediately impressed my mind with the belief that his cough was caused by the articulating head of the thigh-bone of a chicken lodged in the right bronchial tube, immediately beyond the first branch which is given off to supply the upper lobe of the lung. On the day following I examined his chest very carefully with the aid of Cammann's double stethoscope, the result of which more than confirmed the opinion which I had entertained the evening previous. As before, I found the left lung everywhere in a perfectly healthy and normal condition, but the respiration puerile. The respiratory murmur was perfectly clear in the upper part of the right lung, but on passing downward with the stethoscope, I found that all sounds suddenly ceased about the fourth rib. Above this line the voice could be heard through the stethoscope as from a healthy lung; below, it was altogether wanting, the voice reaching the ear only from without. There was some degree of dullness also below this line, and at a point corresponding to the root of the lung there was pain on percussion. From these symptoms I concluded that some foreign body had lodged in the right bronchial tube, between its first and second bifurcation, and it was further evident to my mind that the substance must be something which was of such a shape as to completely fill the calibre of the tube. The round and polished head of a chicken leg-bone would, by its size and form, exactly accomplish this, and the history of the origin of the cough rendered it in the highest degree probable that this constituted the obstruction, and was the cause of all his trouble. To the parents I stated this as my unqualified opinion, and expressed my apprehension that it would be a serious case, unless in some way the bone could be expelled by coughing, or otherwise removed. The operation of tracheotomy I thought would be of no benefit, as the substance was fixed in a position too far to be reached by any instrument with which extraction might be attempted with any prospect of success. Moreover, my diagnosis of the case was received with so much incredulity that I felt certain that any proposition of an operation would have been immediately opposed by the family and their friends. I concluded it would be best to trust almost entirely to nature, with the hope that it would be expelled by coughing, after the bone should become loosened from its position by partial decomposition of its substance and suppuration of the parts surrounding it. I prescribed an expectorant and tonic mixture, containing iodide of potassium and the compound tincture of bark, to promote expectoration, and thereby favor the loosening and expulsion of the bone. To facilitate this, I also directed the patient to rest occasionally, during the paroxysms of coughing, with his arms and face upon the carpet, while his body remained upon a low couch. The directions were repeatedly observed, but no benefit resulted from the attempts to favor the removal of the body by aid of gravity. After a few days he began to expectorate a little, and evident signs of improvement followed. By examination of the chest, it appeared that the increased bronchial secretion had loosened the bone a little from its previously firm position, as a feeble current of air could be heard to pass by the point of obstruction. This improvement in his symptoms encouraged in my mind the hope that, after partial decomposition of the bone by absorption, the solid nucleus of osseous matter would be expelled by an effort of coughing. The expectorant and tonic treatment was continued unchanged. For about three weeks he slowly improved in strength, and regained his natural bouyancy of spirits; but still the cough remained persistent and unchanged in character. During this time I called in, at different times, Drs. Adler and Baker, both of whom agreed with me fully in my opinion of the case, and also in the propriety of trusting to the chances of a natural expulsion of the foreign body from the place in which it was lodged. By the twenty-eighth of December his symptoms became more unfavorable. Loss of animation and general strength was soon followed by complaints of pain in the hip, as he expressed it, leading his parents to think he was suffering from a rheumatic difficulty. On visiting the patient the day following, I found him very much altered in appearance, which was expressive of great suffering.

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* WHARTON, Crim. Law, 541.

† 1 HARRIS, Pa., 631, 633.

‡ LEE, Note to Guy's Principles of Forensic Medicine, p. 134.

The pain which he referred to the hip proceeded from a diffused tumefaction over the lower border of the ribs. The tenderness over this region was so great that he could not tolerate a thorough examination. The slightest touch would provoke resistance and cries of pain. His breath was fetid, and the cough continued of the same character, only the paroxysms were more frequent. The symptoms revealed by auscultation were unchanged, except an increased amount of dullness and tenderness over the submaxillary region. I gave it as my opinion that an extensive abscess had formed in the lung, resulting from a gangrenous condition of the parts below the point of obstruction, and that the matter was emerging from the chest in an unusual way, by passing through the attachments of the diaphragm, and forming a tumor over the border of the ribs, simulating in appearance an abscess of the liver. The pain increased in severity as the swelling advanced. The patient rested in a semi-recumbent position, with the thighs strongly flexed upon the body, by which the parietes of the abdomen were relaxed, and the pressure over the tumor diminished.

In consultation with my friends at this time, it became a question whether this abscess was from the liver or the lungs, and at times some doubt was entertained as to the source of the tumor. The patient's strength failed rapidly. The fetor of his breath was arrested by the administration of the chlorate of potassa, and the bark and iodide of potassium were prescribed as an alterative and tonic.

January 1st. The tumor now increasing antero-posteriorly, and presenting no appearance of pointing. Pain and tenderness over the whole of the right side below the fourth rib. These facts confirmed me in the opinion that the tumor was formed by purulent effusion within the chest. Prognosis very unfavorable. On the night following I was sent for in haste, and found him sinking rapidly, and in the most extreme agony of pain. An expression of intense suffering escaped with almost every breath, and the slightest effort to change his position was always attended with such cries of agony as to unnerve the stoutest heart. To his parents the trial was peculiarly severe, and called forth from his friends the warmest sympathy and the most devoted attendance. At this time his suffering was partially relieved by opiates, but during the night his condition appeared extremely critical, and hardly any expectation was entertained of his recovery. On the day following Dr. Grave was called in consultation. By him the difficulty was regarded as an abscess of the liver, and he appeared altogether incredulous of the existence of any foreign substance in the lungs. Fomentations were applied to the side very assiduously, to the great annoyance of the patient, as the slightest pressure upon the side or movement of the body occasioned immediate and severe pain. This was considered necessary, to favor the pointing of the supposed hepatic abscess. Internally the consulting physician prescribed cherry-laurel water, and directed the use of opiates to be discontinued. For a time my opinions and advice were disregarded, and the case was treated as an abscess of the liver, while the constant cough and peculiar symptoms of disorder of the lungs were quite overlooked, or considered unimportant. As the influence of the opium passed off, his suffering returned as severe as before, and for several days and nights he had no respite from pain of the most agonizing character. Opiates were now gladly resorted to again, and followed by immediate relief. He was allowed to return to the use of wine and bark, and on the seventh I added the compound syrup of the phosphates. During this time he was becoming more emaciated, and it was apparent that he was gradually failing. No pointing of the tumor had yet appeared; on the contrary, it extended transversely across the body, along the lower border of the ribs, reaching at this time nearly to the spine, and measuring ten inches in its antero-posterior diameter. No fluctuation could yet be detected, but on the tenth an exploring operation was decided upon, and the day following, assisted by Drs. Adler and Grave, I introduced an exploring needle, along the groove of which a drop of pus immediately appeared. Withdrawing this, I introduced a small trocar and canula, and drew off nearly a pint of extremely offensive pus. The odor was peculiarly sickening and pungent, and identical with that which I have noticed proceeding from gangrene of the lung, when revealed by post-mortem examination, only of far greater intensity

Fearing there might not be an adhesion between the peritoneal covering of the tumor and that of the abdominal parietes, I opened the tumor by a puncture merely; and, after the evacuation of the pus, I closed the wound tightly by adhesive plaster. By the time the pus should reaccumulate there would necessarily be an adhesion about the point of puncture, through which a free opening could be made without danger of allowing the pus to escape into the cavity of the peritoneum, provided an operation should be again necessary; for I entertained the opinion that it might soon find a natural exit from the body by ulceration into the colon, upon the angle of which I thought the tumor to be impinging. The extensive tumefaction had subsided only in part by the discharge, after which it began to enlarge again in the same form as before. We decided to operate again on the fourteenth, but on the morning of this day he suddenly began to pass by the bowels pus of precisely the same odor and character as that removed from the tumor. Five or six evacuations followed in rapid succession, each one filling the house with the same extremely offensive odor. As these evacuations were going on the tumor subsided, and the patient became greatly relieved of his previous suffering. It was at once evident that the sac had opened into the colon; and as this would be at the deepest and most dependent part of the tumor, we believed it would permit a more complete and constant escape of the pus than by an external opening; and from this consideration I was disposed to regard the occurrence as favorable, and affording the patient a little better chance of recovery. In the mean time the cough continued unremittingly the same, and auscultation still revealed plainly enough to my mind the fact that some foreign body still obstructed the respiration in the right lung. As the discharges continued, the pain gradually subsided, and soon a slow and gradual improvement was apparent. The discharges of pus by the bowels continued about a week, each evacuation being preceded by a sharp pain in the region of the arch of the colon on the right side. About this time the patient had a more than usually violent paroxysm of coughing; after which he appeared much relieved, and the cough almost entirely ceased. On examining the chest, I found the air entered more freely into the lung than previously; and these facts led me to infer that the bone had either been loosened in its position, or it had been coughed up and swallowed. The tumor first subsided over the lateral region, leaving an elevation posteriorly over the lower part of the chest, extending nearly to the spine, and mounting upward over the ribs. This convinced me of the correctness of my diagnosis as to the cause and source of the abscess, and it was farther confirmed by the facility with which the fingers could be inserted under the ribs, and pressed, without producing any pain, upon the lower margin of the liver. There was the same dullness over all the inferior portion of the chest, and some tenderness on percussion. The discharges of pus gradually ceased, but the cough soon returned again as before. In the mean time the patient steadily improved in strength, and apparently was rapidly recovering. As soon as he was able to travel, the family left for the East early in February, by which time the patient could walk about the house without pain, and with considerable freedom of motion. I was still as positive as ever that all his symptoms resulted from a bone in the lungs, and expressed the opinion that, if still remaining, it would probably be in part absorbed, and the remainder might yet be coughed up at some future time.

The remaining history I will give by extracts from letters written to me by Mr. Barrow, from Baltimore. The first was dated March 3d, 1859, of which the following is a portion:—

"Believing that you will be interested in the progress of Alexander's case, I hasten to inform you that your diagnosis of his disease has proven correct. *He has thrown up the bone.* The substance when discharged was about the size of a common garden pea, and *solid bone*, and was undoubtedly a part of a chicken-leg bone. It was very much decomposed, but in its present dry state still shows the grain of the bone. After he left Davenport, he improved rapidly in strength, and fattened up very much, but his cough still continued. He has *not coughed at all* since the bone was expelled, and I now have hope of his ultimate recovery." At the time of writing this he was having symptoms of intermittent fever.

On the ninth of April I received from Mr. Barrow another letter, inclosing the bone, "or rather," he writes, "the little that is left of it; it having been much broken and wasted by handling. After I wrote you, Alexander continued quite sick for four or five days, with high fever and some inflammation of the right lung. He is now rapidly recovering, and seems quite sound, not a vestige of cough remaining."

On the nineteenth of May, he writes again as follows: "Since the last attack, of which I wrote you in a former letter, Alexander has been steadily growing in health and strength. He is, of course, still quite weak in that lung, and unable to engage in violent plays, but there is every prospect of his becoming a stout and hearty boy."

In relation to the diagnosis of this case, it will be observed that I was supported by two practitioners, who were called in consultation, and opposed by another, who, for a time, had almost entire charge of the patient. I cannot better express the embarrassment to which I was subjected than by the following quotation from the same letter last referred to:—

"In the matter of Alexander's sickness," he writes, "we were well aware, at the time, of the doubts, and, in some cases, sneers, expressed by our mutual acquaintances, as to your diagnosis of Alexander's disease; which more than once, I am free to confess, somewhat shook my confidence, not in your skill as a physician, but in your correctness in that particular case; and we had frequently to listen to learned arguments to prove the impossibility of such a state of things as you claimed existed. Even Dr. Grave himself gravely doubted the existence of the bone in his lungs. This doubt was also *very decidedly* expressed by two skillful physicians of Baltimore, acquaintances of mine, to whom I stated the case. Under all the circumstances, I declare to you, that the subsequent *proof* gave me perhaps as much pleasure as it did you; for it was a convincing proof that our friends, in and out of the profession, had not done you justice."

In Dr. Gross's work on "Foreign Bodies in the Air-Passages," I find no case like this in the remarkable phenomena which resulted from the introduction of a foreign substance into the lungs. In a number of cases, abscesses were found in the lung, and a quantity of pus thrown up along with the foreign body; but in none did the matter take such a peculiar course as in the case I have just related.

In some of the cases which terminated fatally, a large accumulation of pus was found in the cavity of the chest, and in a few the abscesses opened externally through the intercostal spaces; but in no instance had the ulceration extended through the diaphragm into the intestinal canal. The nearest approach to this case is one related by Dr. Watson, furnished him by Mr. Herbert Mayo, of London. "The foreign substance was an ear of rye, which occasioned symptoms of pulmonary irritation, attended with hectic fever, and with the most fetid expectoration. On post-mortem examination, the ear of rye was found in an abscess which was common to the right lung and to the liver, the latter of which had become involved by an extension of the morbid action across the diaphragm."

In many cases of obstruction of the air-passages the chest is unnaturally clear and resonant. In this case the dullness corroborates the statement of Dr. Gross, as necessarily resulting from the complete obstruction of the passage by the form and size of the bone, which not only prevented the entrance of air, but also the evaporation and discharge of the bronchial secretions.

It may be well to consider whether in this case the operation of tracheotomy should have been performed, and an attempt made to remove the bone. From the history it will be apparent that it was impracticable, from the disposition to discredit the opinion which I entertained of the nature of the difficulty; but I doubted then, and still entertain a doubt, of its propriety in this instance, on account of the form of the substance, its close impaction, and the depth to which it had descended in the lung. Had the same substance lodged in the larynx, trachea, or primary bronchial tube, of course an operation should have been immediately resorted to; and even if lodged in the second division of the bronchial tube, as in this case, an operation might be performed with some chance of success, provided the substance had an irregular form or uneven surface. Even where the substance has been lodged just below the bifurcation of the trachea, the operation has been performed by as skillful a surgeon as the late Dr. McClellan, of Philadelphia, aided by Drs. Gross and Sharp, and repeated attempts made to extract the foreign body, a kidney bean, without success. In this instance, the patient died from the effects of the ensuing inflammation of the lung, nine days after the operation. The result in this case might reasonably enough discourage a similar attempt in one so much more unfavorable as the subject of this report.

After reflecting upon the history of the cases reported by Dr. Gross, I am impressed with the belief that my original opinion was correct in deciding against the practicability of a successful operation, although, by the directions given by this eminent author, I would have been justified in making the attempt. I think it would have been unsuccessful had it been attempted; and it might have excited an inflammation in the upper part of the lung, or otherwise aggravated the disorder in the chest to such a degree as to occasion a fatal termination, and thus sacrifice a life which, perhaps, escaped such a fate by trusting in the prospect of spontaneous expulsion.

Art. III.—*An Inquiry into the Character of Green and Melænal Discharges from the Bowels.* By S. G. Armor, M.D., formerly Professor of the Practice of Medicine in the Medical College of Ohio, and late Professor of Pathology and Clinical Medicine in the Medical Department of the Missouri University.

The recent labors of Drs. Bernard, Jones, Bidder, Schmidt, Lehmann and others, have added much to our knowledge of the physiological functions of the liver. Indeed, they may be said to have entirely remodeled the whole literature of the subject, and to have invested it with new and peculiar interest.

It is not my purpose, however, at present, to present a *résumé* of the many interesting facts elicited by these investigations, but to attract attention to a single point, and to such facts only as bear upon my present inquiry.

Can we, as has been generally supposed, rely upon green discharges from the bowels as indicating increased or perverted hepatic secretion? Is this the essential practical fact which should chiefly claim our attention? Or must we look to some other pathological condition? And if so, what is that condition?

Whatever views may be entertained relative to these questions, it must be conceded that they cover points of inquiry of great practical importance, for the reason that they relate to a class of diseases of very frequent occurrence.

Of the various secretions poured into the digestive apparatus, none have been regarded with more interest than that of the liver; nevertheless, it is only quite recently that we have arrived at any reliable data as to the real constitution and uses of its secretion. To arrive at these, physiologists have made fistulous openings into the gall-bladder, and, by ligaturing the hepatic duct, have been able to collect and analyze the biliary secretion, and thus to establish many interesting facts, heretofore unknown, as to the true position of this secretion in the organism. I am more particularly interested, however, at present, in noting the effects of the arrest of the hepatic secretion *on the contents of the intestine.* To arrive at this, Drs. Bidder and Schmidt performed the operation of opening a biliary fistula on a great variety of animals under a great variety of circumstances. The details of these experiments are exceedingly minute and accurate. Among other observations of interest to the physiologist, they have demonstrated two facts which have a direct bearing on the subject of my present inquiry: First, that bile undergoes certain alterations in the intestine, "transformations of a catylitic nature, produced by the contact of the bile with the intestinal juices." Second, that it is gradually re-absorbed in its passage from the small to the large intestine; and that finally, in a normal condition of the bowel, it gradually disappears on its road from the liver to the rectum; thus agreeing with Boerhaave, and some of the older physiologists, that "almost the whole mass of the fluid secreted by the liver and poured into the cavity of the intestine, is again secerned or drunk up by the absorbing veins from the alimentary and fæcal contents, before they arrive at the anus."

It has also been demonstrated by experimental observation, that when no bile flows into the intestine, and the animal is fed on *flesh,* rapid decomposition of the contents of the canal occurs, attended by the secretion of fetid gases. When fed on *bread* or starchy substances, the fæces or abdominal gases were odorless, and sour rather than putrid.

In the absence, then, of healthy biliary secretion, we have, it appears, one of two conditions, or the combination of these, depending upon the nature of the food of the animal—*putridity* on one hand, and excessive *acid fermentation* on the other. In either case the color of the fæcal contents is usually changed.

The dark golden-brown color of healthy fæcal dejections depends upon the presence of *biliverdine*—the coloring matter of the bile, which exists in such small quantity that its exact proportion has never been determined.

In cases of biliary obstruction, it is this element of the bile that is re-absorbed into the blood, and stains the tissues and fluids of the body of the peculiar lemon-yellow color which is characteristic of jaundice, the absence of this coloring matter giving rise to light or ash-colored stools.

With these facts before us, let us again submit the point of inquiry: Does the dark-green color of the stools depend, as affirmed by Chomel, and reiterated by many authors and teachers of practical medicine, upon the presence of bile proper? This view, it will be at once perceived, is not in harmony with the facts already referred to; *first*, that biliary substances proper disappear in their passage through the intestine; *second*, that the characteristic color of the fæcal dejections depends not upon the chief constituents of bile, but upon its *coloring* matter, the contents of the bowels becoming stained by its presence just as the tissues and fluids of the body become colored in jaundice.

There has been much speculation as to the character of green stools, *which follow the administration of calomel.* Mercury is administered, and green discharges are regarded as evidence of the secernent action of the drug upon the liver. How far is this opinion founded in fact? It cannot be denied that they frequently *follow* the administration of calomel. It must also be confessed that they are quite *peculiar* to the administration of this drug; and yet it by no means follows, as a logical sequence, that such discharges are evidence of a quickened biliary secretion. What, then, is the explanation of the relation which so frequently exists between the administration of mercury and the green discharges which follow? Dr. Lehmann says, in his Physiological Chemistry, that after calomel has been taken, "we always find mercury in the stools," whether they be green, or black, or the ordinary color. These observations have also been distinctly established by Hermann, Merklin, and others. The sulphide of mercury may be readily separated from the fæcal evacuations, and its chemical nature, when separated, may be easily recognized. "The sulphide of mercury," adds Lehmann, "when finely comminuted, may certainly, like sulphide of iron, give rise to a light-green color with animal substances, and especially with the yellow bile pigment." Indeed, Hermann asserts that powdered calomel, when triturated with yellowish-brown excrements, causes them to assume a greenish color.

Still I would not deny the presence of bile in calomel stools; nor would I deny that the administration of calomel actually causes an increased secretion of bile. The presence of the resinous biliary acids may be readily detected by Pettenkofer's test, especially when the contents of the bowel have been rapidly discharged under the spur of excitement from the action of a mercurial cathartic; and even the green color may depend partly on bile pigment. The question at issue is as to the invariable relation existing between the true constituents of bile and green discharges. Formerly, it will be remembered, this green color was regarded as a sign of the presence of an excess of bile; latterly, however, the necessary presence of bile in green stools has been altogether denied. And the facts certainly clearly indicate that if bile be present in such discharges, it is in diminished rather than in increased quantity.

This subject occupied, for some time before his death, the attention of that eminent analytical chemist, Dr. Golding Bird, whose researches in chemical pathology were always of the most accurate and interesting character. He directed his attention chiefly to the green alvine evacuations of children, "with the view of testing the accuracy of the popular opinion of their being chiefly composed of bile." For this purpose he carefully analyzed a specimen of a green evacuation passed by a hydrocephalic infant while under the influence of mercury. It was a dirty-green, turbid fluid, and by repose separated into three distinct portions. 1. A supernatent oily fluid, presenting a brilliant emerald color. 2. A dense stratum of mucus, coagulated albumen, and epithelial debris. 3. A deposit of large crystals of triple phosphate of magnesia and ammonia in prisms of an apple-green color. The supernatent green fluid was decanted for examination, and its chemical elements carefully analyzed. The following is a view of the results of the examination:—

Alcoholic extract,	Organic	34·50
	Inorganic	5·50
Aqueous extract,	Organic	11·25
	Inorganic	1·75
Insoluble matter,	Organic	56·00
	Inorganic	1·00
Water and volatile matter		900·00
		1000·00

The organic portion of the alcoholic extracts, in the foregoing analysis, consisted chiefly of fatty matter, cholesterine, and a green substance supposed to be identical with the so-called *biliverdine*, with but a *mere trace of bile*, barely sufficient to communicate a bitter taste to the extract, but not enough to leave any carbonate of soda in the residue of incineration. The aqueous extract consisted chiefly of ptyalin, with other extractive matters.

An analysis of a green calomel evacuation has been recorded by Simon, with results corresponding with the observations of Dr. Bird.

Professor Kerstein, of Freiberg, has published some late researches on the nature of green stools, said to be of frequent occurrence in patients who are under a course of certain mineral waters. He altogether denies that any quantity of bile is present in the green evacuations of invalids and others who partook of the Carlsbad waters; but attributes the tint to the green sulphuret of iron, generated in the stomach and intestines by the reduction of the sulphate of soda of the water to a sulphuret, and its subsequent action on the iron held in solution in the water. He states, in confirmation of his view, that hydrochloric acid destroys the green color of the stools, evolving at the same time sulphuretted hydrogen. Dr. Frankl, however, of Marienbad, attributes the color of these evacuations to the "same source" as the green mucous discharges from the vagina in leucorrhœa, the urethra in gonorrhœa, and the nasal secretions in some forms of coryza.

Professor Lehmann calls attention to the green fluid or semi-fluid excrements which are not unfrequently discharged in typhus fever, even when no calomel has been administered, and adds: "bile-pigment and the biliary acids are only rarely to be detected in any quantity in such stools by a chemical investigation." I have observed the same character of discharges in the more malignant forms of scarlatina, and on submitting them to the test of the microscope have always found broken-up and distorted blood-corpuscles, together with an admixture of the elements of the blood, such as is seen in the green discharges of young children.

From long and close observation and careful analyses, Dr. Golding Bird arrived at the conclusion that green discharges have at least no *direct* connection with morbid biliary secretion, but that they are occasioned *by a morbid exudation from the intestinal mucous membrane.*

Believing that this view is in harmony with well-attested facts, I have publicly maintained it, for many years of my professional life, as probably the true pathology of these affections. It must be confessed, however, by those who maintain this view, that a morbid condition of the liver is often associated with these discharges. Indeed, so constant is this relation, that the older pathologists were led to attribute these discharges to a "morbid sympathy between the liver and intestines,"—an explanation which cannot be said to be remarkable for its clearness. Others, accommodating themselves to the more generally received opinion, and certainly to a more tangible pathology, attributed these discharges to an increased activity of the liver in throwing off "crude bilious matter;" whereas the true cause is referable (if the liver be at fault) not to sympathy, nor to excessive action of the liver, but to *congestion of the portal venous system.* Two conditions are associated with this as necessary concomitants: First, arrest of hepatic secretion, growing out of congestion; second, excessive acid fermentation of the fæcal contents, resulting from the absence of bile, as demonstrated by the experiments of Bidder, Schmidt, and others.

In infantile life, mucous membranes become active outlets for morbid action; and at no other period of life is there the same relative amount of lithic, lactic, and other acids formed. It is estimated by Dr. Rigby that a child eight years old eliminates as much urea as one of adult years. Hence, in cases of deranged assimilation, with arrest of hepatic secretion, the contents of the bowels are apt to become excessively acid, and this free acid, mingling with the elements of blood which slowly percolates through the over-strained capillaries of the mucous membrane, whose epithelium has been swept away, gives rise to frothy, green discharges, more or less mingled with fragments of blood-corpuscles, mucus-corpuscles, and the hæmatin of the blood.

In the examination of this subject, therefore, our attention should be mainly directed to the condition of the *mucous membrane* for an explanation of the phenomena of these discharges. An essential fact in their production *is the hyperæmic state of this tissue.* The result of this hyperæmia we will better understand by studying the process of "*exudations of mucous membranes,*" as described by Rokitansky. He points out the analogy of what he calls the "*croupy process,*" as occurring on *all* mucous membranes, by which the epithelium of the membrane is destroyed, and rapid exudation of plastic matter takes place upon its free surface. This exudative process gives rise, under certain conditions, "to a sanious exudation of a variously shaded brown or *green* color." At other times the products are either albuminous, jelly-like and pellucid, or quite colorless, as observed in Asiatic cholera.

The physiological habits of mucous membranes are quite peculiar. The epithelium covering the free surface is formed of minute scales, "packed in layers like figs in a box." The recent and inferior layer of cells projects against the superior and older cells. As secretion is increased by irritation of the mucous membrane, rapid desquamation of the epithelium takes place; in the pushing-out process the deeper layers throw off the superior cells before they have arrived at maturity; the nutritious matter cannot be consumed by those immature cells; and hence we find in the exudation, instead of healthy normal mucus, an increased quantity of immature epithelium, together with altered blood-corpuscles, more or less quantity of semi-fluid, muco-gelatinous matter, and substances which yield a cytoblastema for the higher development of cells.

This hyperæmia of the mucous membrane may readily extend, by continuity and similarity of structure, to the hepatic system, which, like the same structure in other regions of the body, is liable to all its varieties of inflammation.

Dr. Budd describes, among other varieties, what he calls, in accordance with the analogy of the same membrane in other organs, *croupal* or *plastic* inflammation, and suggests that this "bronchitis of the liver" may play as important a part in diseases of the biliary apparatus as does bronchitis in those of the respiration.

It will readily be seen, by studying the law of inflammation of mucous membranes, that the character of the secretion or exudation on their free surface is an expression of the *degree of irritation*, rather than of the peculiar character of the inflammation. The same tissue is everywhere obedient to the same law of inflammation; and hence the interesting fact, that the microscope reveals, essentially, the same products of inflammation in the green and melænal discharges of childhood that have been observed in the *black vomit* of yellow fever. The difference is only a question of rapidity of exudation, and degree of inflammation. In either case a species of hemorrhage takes place from the congested or inflamed mucous surface. In the one instance the effusion is rapid and more copious, and the matter ejected is, therefore, more easily recognized as hemorrhagic in character; in the other, blood is exuded very slowly and in small quantities, giving rise to the dark-green stools characteristic of childhood,—the green color partly depending, it may be, upon the presence of bile-pigment.

Dr. Golding Bird has demonstrated, however, that green coloring matter may be generated in the animal economy from the action of certain matters on the hæmatosin or coloring matter of the blood, independently of the presence of bile-pigment. He cites the well-known fact, that when blood is exposed to the influence of sulphuretted hydrogen gas, it acquires a deep olive-green color when viewed by reflected light, and a dingy-red by transmitted light,—"phenomena identical with those presented by the coloring matter of the bile." He describes two products of the action of nitric acid upon a clot of blood—an olive-green sweetish substance, and an intensely bitter yellow one. To the former he applies the conventional term *chloro-hæmatin*, and to the latter that of *xanthe-hæmatin*. And, in the conclusion of a very able article upon the subject, adds:—

"Since, then, the coloring matter of the blood is fully capable of being converted into green pigments under the influence of different agents, it must, I think, be admitted that we are not to assume the green color of an animal excretion as of necessity depending upon an excess of bile. And when chemical analysis fails to indicate the presence of any quantity of this secretion in a bright-green evacuation, it is but legitimate to seek for some other cause of this tint. The proportions of the so-called biliverdine very closely approach to those of the xanthe-hæmatin before alluded to, and I confess that I am induced to regard the green color of the emerald and 'chopped spinach' stools of children as depending upon the presence of modified blood, rather than on an excess of bile.

"Believing that the green stools alluded to are but a form of melæna, I have often closely questioned the nurses of children voiding them, regarding the appearance of the evacuations before and after the development of the green color, and have almost constantly been told that streaks, or even clots of blood, had been observed.

"I regard, then, the presence of green stools as indicative not of a copious secretion of bile, but of a congested state of the portal system, in which blood is exuded very slowly, and in small quantities, so as to allow the color to be affected by the gases and secretions present in the intestines; a state of things capable of readily ending in melæna, in which the effusion of blood is so copious and sudden as not to give time for the occurrence of the changes alluded to.

"There is, moreover, a peculiarity in the green dejections of children, and others whose portal circulation is congested, which, so far as I know, is quite distinct from any property presented by mere bile under similar circumstances. I allude to the effect of exposure to the oxygenating influence of the air upon them. When first voided, the 'chopped spinach' stools are, in the majority of cases, of a bright-orange color, and they assume their characteristic grass-green hue only after exposure to the air. The time required for this change varies remarkably. I have seen an orange-colored stool become green in a few minutes, and in the same patient, only a day or two afterwards, many hours may have been required to effect the same change."

To resume. In proof of the view here taken, that green and melænal discharges are not caused by the presence of an excess of bile, we have adduced the facts:—

1. That in a normal condition of the bowels the bile undergoes certain changes, and is absorbed on its road from the liver to the rectum.

2. When no bile flows into the intestine, rapid decomposition of the contents of the canal occurs, attended by putrid or sour discharges,—conditions characteristic of the green discharges of childhood.

3. The characteristic color of the fæcal dejections depends upon the presence of the *coloring matter* of the bile, not upon the presence of bile proper.

4. The green stools, *which follow the administration of calomel* depend upon the presence of the sulphide of mercury.

5. The analyses of Dr. Golding Bird, Simon, and others show but a *trace of bile* in such discharges.

6. No bile was discovered by Professor Kerstein in the green discharges of those who partook of the Carlsbad waters,—the color depending, as he supposed, upon the presence of the green sulphuret of iron.

7. The same green color is observed, under some circumstances, in the mucous discharges from the vagina in leucorrhœa, the urethra in gonorrhœa, in some forms of bronchitis, and in the nasal secretions in coryza.

8. Hyperæmia of the mucous membrane is often followed by rapid desquamation of its epithelium, and a consequent escape of the elements of the blood in such small quantities that its color is affected by the gases and secretions of the intestine.

9. In proof of this, the microscope reveals, in such discharges, altered blood-corpuscles, granules, free nuclei, and jelly-like fibro-albuminoid mucus, such as is observed in inflammatory exudations of mucous membranes.

10. The observations of Dr. Golding Bird demonstrate that green coloring matter *may* be generated in the animal economy from the action of certain matters on the hæmatosin, or coloring matter of the blood.

And, lastly, the fact that these discharges most generally occur in the warm summer and fall months is strongly confirmatory of the view here taken. The debilitating effects of heat, when combined with moisture, very readily develop diseases of the gastro-intestinal mucous membrane; for the reason that there is a direct relation, based on the general law of identity of structure, between the skin and mucous membrane of the bowels. "An important medical law," says Erasmus Wilson, "is founded on the continuity and similarity of structure of the investing and lining membrane of the body. This law resolves itself into three expressions—namely, *that disease affecting a part of a membrane is liable to spread to the whole; secondly, that disease of the mucous membrane may spread to the skin, and vice versa; and, thirdly, that disease of a part of a mucous membrane may be translated to a part of the skin, and vice versa.*"

This law of correlation between the cutaneous surface without and the mucous membranes within, has been long known and recognized. Thus, sudden changes from the extreme heat of mid-day to the damp chill of evening, morbidly impress the excitor or sensitive nerves of the skin, and, through the medium of the spinal centre, excite and modify the secretory function of the abdominal viscera. These suffer from congestion; their vital properties are lowered, and their functions consequently illy performed. The liver is readily involved in this morbid action. Between the extreme vessels of the *vena portæ* and the extreme vessels of the surface of the body, there exists one of the strongest sympathies in the human frame. The records of tropical climates, and of hot days and chilly nights in our own climate, furnish many striking illustrations of this law. And, for very obvious reasons, the liver becomes involved, in its vascular lesions, with other portions of the abdominal viscera. Congestion of the portal capillaries is followed by congestion of the veins and capillaries of the intestinal mucous membrane, and this condition, we can readily believe, may, under peculiar circumstances, be followed by percolation of more or less of the elements of the blood through the mucous coat of the intestinal canal.

In the foregoing paper I have endeavored to arrange and present some reliable facts and observations bearing upon a subject of acknowledged obscurity. If the views be correct, (and I claim for them well-attested observation,) they will very much modify the popular notion of the pathology and treatment of abdominal affections, characterized by green and melænal discharges.

ART. IV.—*Two Cases of Placenta Prævia.* By S. F. STARLEY, M.D., of Springfield, Texas.

THERE is, perhaps, no subject within the whole range of obstetric science that should be considered of more importance than placenta prævia. Important, because in almost every instance the life of the mother or child depends upon the skill and judgment of the accoucheur, and the decision and promptness with which he acts. Believing it to be the duty of every one engaged in the practice of medicine, surgery, or obstetrics, to record such of his experience as may add to the mass of facts from which useful and practical deductions may be drawn, I offer the following cases to the medical profession, hoping thereby to add my mite to the facts already brought to light in connection with the interesting subject to which they relate. The first case was more immediately under the care of my partner, Dr. John L. Alston, by whom the following report was drawn up. The second occurred under my own care, though we were both concerned in the management of each.

CASE I.—I was summoned, on the twenty-first of February last, to attend Mrs. P., twenty-five years of age, in the absence of her family physician. She thought that she was about eight and a half months advanced in her seventh pregnancy, but could not tell exactly, as she had not menstruated since her last abortion. She is a stout and healthy-looking woman, and says that she has always enjoyed good health during all her pregnancies except the last; had brought three children, at their full terms, with quick and easy labors, and had had two abortions from slight accidents, as she supposed. On questioning her, I ascertained that she had never had leucorrhœa, or any other symptom of inflammation of the os uteri, either during or after pregnancy; that she had had slight hemorrhage every day or two for the last four or five weeks, and once or twice had lost so much blood that she became alarmed, and sent for her family physician. On the day that I was consulted, profuse hemorrhage occurred, but had ceased before my arrival. From this attack she must have lost a considerable quantity of blood, judging from the clots I found about the bed, and her prostrated condition. She had not felt any pain in the back, or any uterine contractions during this or the preceding bleeding. Pulse, 120 per minute, and feeble. Complained of roaring in the head and intolerance of noise; faintness on rising up; face blanched; great thirst; irritable stomach, etc. I told her that from the absence of symptoms of uterine disease and pains during the hemorrhages, I apprehended a placenta prævia, but would postpone a vaginal examination until the bleeding should recur, fearing lest in making the examination I would remove the coagulum formed, and renew the bleeding. I gave her opium and acetate of lead to quiet the nervous and vascular systems, and to act as an astringent; and, as there was no hemorrhage going on, I provided myself with a quantity of clean, raw cotton, to make a tampon if it should be required. I ordered the medicine to be given every two hours, and laid down to sleep, with express command to the nurse that I should be awakened if hemorrhage should again take place. This did not occur, however, and on the morning of the next day I found her much better in every respect; but about ten o'clock A.M., the bleeding commenced again profusely. I then made an examination per vaginam, and found the os uteri high up and far back toward the promontory of the sacrum, and slightly dilated. By patient effort I passed my finger through the os, and ascertained that the placenta covered the opening. I immediately withdrew my finger and introduced the tampon, rolling the cotton into a cylinder, as directed by Professor Henry Miller, in his System of Obstetrics, and securing it with a T-bandage. I packed the vagina so full of cotton that the upper portion of the canal was stretched, and formed a cone, with the apex at the vulva. She went on well during the day, but toward evening labor-pains set in, and increased during the night. About midnight a hemorrhage made its appearance at the vulva, and on examining, I found the tampon loose. I did not, however, withdraw the latter, but pressed it up as high as I could, with due regard to the parts, and filled the vagina below full of fresh cotton. This arrested the bleeding effectually.

On the twenty-third, the pains became stronger and more rapid; I sent to town for my partner to assist me. The pains soon became so violent that I concluded to remove the tampon to ascertain the condition of things, and, on making an examination, found the os uteri dilated to the diameter of an inch and a half, and the vertex presenting. The hemorrhage had ceased, and the membranes were protruding; the placenta was adhering to the front and right side of the cervix, and had merely reached across the os to the left side before the latter commenced dilating. The os dilated slowly, and a great many pains made but little impression on it. I now considered the case as though the placenta had grown to the upper part of the uterus, and treated it accordingly. To increase the contractions I used orificial stimulation by pressure against the front and right side of the os uteri during the pains. At eleven o'clock A.M. she was taken with a convulsion, after which I gave her some whisky, and just enough chloroform, by inhalation, to stimulate the nervous system, keeping her head very low all the time. She soon had another convulsion. By this time my partner had arrived. We then concluded to give her whisky and morphine; by persevering in the use of which she had no more spasms. Labor now progressed favorably, and as soon as the head and shoulders passed the vulva, in order to cause the uterus to contract firmly, while supporting the perinæum with my right hand, I immersed my left into a pan of cold water, and applied it firmly over the lower part of the abdomen. As soon as the hips passed, my partner dipped both his hands into the water and made pressure in the same manner. As soon as we could we gave her half a drachm of oil of ergot. The placenta was thrown off without the loss of any blood. The child, a boy of average size, was still-born. We gave it up as lost only after having used the Marshall Hall method of resuscitation for an hour; the mother made a speedy recovery.

CASE II.—On the evening of the twenty-fourth instant I was called to attend Mrs. W., aged about twenty-eight years, in the eighth and a half month of her fifth pregnancy. At six o'clock P.M. she was seized with labor-pains, attended with profuse hemorrhage. Owing to her residence being four miles from town, and her husband having some difficulty in sending for me, I did not reach her residence until five hours had elapsed from the time the pain and flooding commenced. On my arrival, the husband informed me that she had had some hemorrhage, every few days, for about four weeks. I found her blanched and exhausted from the loss of blood; the pains had nearly ceased; the uterus was lax and non-contractile; pulse small and frequent; great restlessness; excessive thirst, and the stomach so irritable that the water, which was incessantly called for, was rejected almost as soon as swallowed. On an examination per vaginam, I found the os uteri dilated to the size of a dollar, with a complete placental presentation, the vertex being the presenting portion of the fœtus. The blood was flowing rapidly, and the patient began to faint while I was making the examination. I had the head lowered instantly, and administered half a grain of morphine in some whisky, which had the effect of somewhat restoring her. I then attempted to detach that portion of the placenta which was within reach of my finger, after the plan proposed by Dr. Robert Barnes in his Lettsomian Lectures, (May, 1857;) but the hemorrhage was so profuse, the uterus so perfectly lax, the manipulations not exciting the slightest contraction, and the patient apparently sinking rapidly, I desisted, and resorted to plugging, which I did with all possible haste. The material used for this purpose was cotton, care being taken to pack it firmly against the os uteri, so that the vagina was tightly fitted quite down to the vulva. A towel was then folded and rolled into a cylinder about nine inches in length, which was rolled lengthwise in another towel, thus forming a cylindrical pad, which was applied to the vulva, one end of the long towel being brought up behind and the other in front, and both fastened to a handkerchief passed over the shoulder, in the form of a suspender. In this way firm pressure was made against the perinæum, and the plug more firmly maintained in situ. The hemorrhage now seemed to be arrested; but the quantity of blood already lost was so great, there being at least half a gallon on the bed, that it required the free exhibition of brandy and opiates to support life. My partner, Dr. Alston, having arrived, it was agreed that we should endeavor to sustain the patient by stimulants, nourishment, and opiates, until uterine contractions should again set up, which we believed the plug would call into action. But in this we were mistaken. She continued restless, with hurried breathing and occasional vomiting, until two o'clock on the twenty-fifth, when, after a fit of retching, I found that blood was escaping, notwithstanding the plug had been tightly packed in the vagina. On passing the finger I found the plug lying loose, which I supposed was owing to the relaxation and yielding of the vaginal walls. I removed the tampon, and finished the operation of detaching as much of the placenta as remained within reach of the finger. The uterus would not contract. The blood continued to flow while I was manipulating the os. The vagina was immediately replugged, so that no more blood could escape. We gave ergot, injected cold water into the rectum, applied cloths wrung out of cold water to the abdomen and vulva, used friction over the abdominal muscles, and gave as much brandy as we could get her to swallow, but all to no effect. She gradually sank, and died at seven o'clock P.M., no contractions having taken place after I saw her. Some slight pains were complained of, but if the uterus contracted at all, its action was too feeble to be felt through the abdominal parietes.

In this case labor had evidently begun, for the husband informed me that he expected the delivery would take place before I could reach her, so violent were the pains at the onset. But six hours having elapsed before my arrival, she had lost enough blood to prostrate her and suspend the action of the uterus. I am aware that the treatment pursued in the case is open to the criticism of those whose only anchor of hope is chained to the operation of turning and forced delivery, and perhaps I shall not escape the censure of those who can see no safety except in the total detachment of the placenta after the manner recommended by Professor Simpson. But had artificial delivery been attempted, it is evident to my mind that she would have died before the uterus could have been emptied. And granting that she could have survived long enough for the completion of the operation, is there any reason to believe that the uterus would have contracted and put a stop to the fatal drain? On the other hand, had I effected the total detachment of the placenta, would that have staunched the flow of blood? I think not. What then could I do? The orificial irritation consequent upon the separation of a portion of the placenta failed to excite the least contraction. The flood-gates seemed to be lifted still higher by it. What else could I resort to but the tampon? It is agreed by all authorities that the plug is an efficient agent in bringing on uterine contractions. Professor Henry Miller relies exclusively on it to excite contractions, and to control the flooding until the liquor amnii is evacuated. He says this is the only method of treatment of which he has any experience, and he has employed it with uniform success, so far as the mother is concerned.

The operation proposed by Dr. Barnes is to carry the detachment farther, so as to separate all that portion of the placenta which adheres within the cervical zone or region of dangerous placental seat. Speaking of the cases in which this operation may be expected to succeed, he says: "There are cases in which contractions of the uterus are going on; there are cases more dangerous still, in which contraction is absent. Labor with relaxation is dangerous under almost every condition; it is eminently so when complicated with placenta prævia. Where contraction is present we possess one necessary element of safety; we may be satisfied with the artificial separation of the placenta from its attachment to the cervical zone. Where contraction is absent, we must at the same time use every available means of rousing the contractile energy of the womb. Sometimes the stimulus imparted to the reflex system by the necessary manipulation is itself enough to excite contraction, but not always." (*London Lancet*, December, 1857.)

It will be observed that in the foregoing case I acted upon the suggestions of Dr. Barnes, as nearly as the circumstances would permit. The operation failing to excite contraction, the tampon was used without loss of time. This was aided by stimulants, opiates, cold applied to the abdomen and vulva, frictions over the abdominal muscles, injections of cold water into the rectum, and other means, but all failed. Had artificial detachment of that portion of the placenta which must necessarily have separated by the expansion of the cervix been performed before the physiological action of the uterus was annihilated from the loss of blood, or had the exhausting drain been promptly met by the opposing tampon, and the blood compelled to coagulate at the mouths of the vessels from which it flowed, there can be no doubt that efficient contractions would have set up in due time, and the fatal result have been averted.

ART. V.—*Notes on the Nature of the Leprosy of Ancient and Modern Times.* By ROBERT SIM, M.D., Surgeon to the Anglican Hospital, Jerusalem, Syria.

THE question has often been asked whether the disease affecting those persons commonly called "Lepers," residing near the Zion Gate, is of the same nature as that described as "Leprosy" in the Mosaic code. Now, for reasons hereafter to be given, I do not think the "Tsarath" of Leviticus means any particular disease, but that it is the generic term for the severer forms of cutaneous affections in general. My friend Mr. Calman, whose knowledge of Hebrew entitles his opinion to confidence, takes this view of the case; and a very intelligent Rabbi, whom I have consulted, states that there are no fewer than *sixty-eight* kinds of leprosy. This is an enlargement on the "laws and tokens to discern leprosy," as laid down by Moses in the 13th chapter of Leviticus, but really more in accordance with the sense of the chapter and observation, than to assign the "Tsarath" to a single disease, as is done by some of the most eminent dermatologists of the present day.

The disease afflicting those poor creatures near Zion Gate is beyond all doubt—and as it is generally described the "Elephantiasis Græcorum" or "Lepra Araborum"—a tubercular disease, having many other names. With these, at present, I have nothing to do, as all I wish to prove is, that neither that nor any other *particular* disease is entitled to the definite appellation of "*the* leprosy." I need only recall, for a moment, that walls of houses and garments were liable to leprosies. It would be difficult to understand how either could be affected by tubercular diseases.

Mr. Calman says that the nitrous efflorescence, observable on the walls of the houses in this city, is a leprosy; also that cloth, made of diseased or badly-prepared wool, is still considered leprous by the Jews. Very probably moth-eaten clothes come under the same denomination.

A strong reason for maintaining that the "Elephantiasis Græcorum" is not *the* leprosy, is, that *all* the diseases described in the 13th chapter of Leviticus were *curable*, and that without the aid of miracle; for the *cleansing* of the leper by the *priest* was *subsequent* to the *healing* of the disease in the *patient.* By what means the lepers were cured is not of any consequence to know, even were it possible to determine; it is sufficient to know that they were cured without miracle. The "Elephantiasis Græcorum" is still, notwithstanding the progress of medical science, properly speaking an *incurable* disease, although when treated with energy at its beginning, it is sometimes checked. "Tsarath" is rendered by

Michaelis "Sharp affliction," and by Eben Esra, "Grave or Serious disease." Now, I believe that these terms might be applied to very many skin diseases besides the one in question. If *pain* be meant by these commentators, it would almost prove that the "Elephantiasis Græcorum" could not come under the denomination of "Tsarath," for one of its synonyms is "Elephantiasis Tuberculata ANAISTHETOS." Without laying too much stress, however, on this point, and knowing that the disease is occasionally accompanied by pain, it certainly deserves the title of "Sharp affliction," or "Grave disease." It will be observed that I do not say that it is not *a* leprosy, but simply that it ought not to be styled *the* leprosy.

The Rev. Dr. R. W. Stewart, of Leghorn, mentioned to me that he had seen a case, at Mount Sinai, of a man having the leg and thigh *quite white*. The man, if I did not misunderstand the doctor, exhibited himself *as a leper*. I have no doubt about his case being similar to that of Moses, Miriam, Gehazi, and Naaman. These cases were, in all probability, either "Lepra Vulgaris," or "Psoriasis Inveterata," both squamous diseases, and, to a person unaccustomed to see them, might readily be mistaken for the same. There is no doubt, as I believe Willan pointed out, that the term "leprosy" ought to be restricted to *squamous* diseases; but this proves nothing, either one way or another, as to the meaning of "Tsarath."

I believe all the confusion pervading the subject is referable to the loose manner in which the earlier translators performed their task.

I shall take each case mentioned in the Bible, and attempt, however unfit for the undertaking, to assign a name or class to it, in accordance with modern dermatology. Of course I do not pretend to say that it is possible to give each case a definite name, nor even to place it in a class; but I think it quite as reasonable to attempt this as to exclude *all* diseases in favor of the "Elephantiasis Græcorum" from the name of leprosy.

The cases as they occur are,—

1. That of Moses, Exodus iv. 6. This, as already stated, was probably "Lepra Vulgaris," or "Psoriasis Inveterata," (squamous.)

2. The case mentioned in 2d and 3d verses of 13th chapter of Leviticus may belong to almost any class of skin diseases, or even to no class. It would be endless to name the various diseases to which the description may be applicable.

3. The case in 7th and 8th verses of same chapter seems to have been either pustular or vesicular. If belonging to the first, probably a variety of "Impetigo," or "Ecthyma." If to the second, very likely "Eczema Simplex."

4. The case in 9th, 10th, and 11th verses might be almost any kind of ulceration,—from being "*old*," very probably an indolent varicose ulcera-

tion, which heals and breaks out again *ad infinitum.* It also might be the "Lichen Agrius," (papular.)

5. The case in 12th and 13th verses. This is a peculiar case, and seems to be "Lepra Vulgaris," or "Psoriasis Inveterata." The peculiarity consists in the leper being pronounced *clean* when completely covered by the eruption. Had this meant the mutilating malady observable at the Zion Gate, how different its termination!

6. The case in the 14th and 15th verses seems to be exactly like the fourth quoted.

7. The case in 19th and 20th verses may be a variety of "Impetigo," (pustular,) or "Eczema," (vesicular.)

8. The case in 21st and 22d verses may be "Lichen Simplex," (papular,) or "Lepra Nigricans," (squamous.)

9. The case in 24th and 25th verses very probably "Eczema Rubrum," (vesicular,) or "Eczema Impetiginodes," combining, like many other cutaneous affections, the characters of vesicular and pustular diseases.

10. The case in 26th and 27th verses similar to the eighth case quoted.

11. The case in 29th and 30th verses is probably "Porrigo Decalvans" in the head, and "Sycosis Menti" in the beard, (both pustular.)

12. The case in 35th and 36th verses is probably "Porrigo Favosa," or "Porrigo Scutulata," (both pustular.)

13. The case in 42d, 43d, and 44th verses may be "Eczema of the Scalp," (vesicular,) or "Porrigo Decalvans," (pustular.)

14. The case of Miriam, Numbers, xii. 10, similar to first quoted.

15. The cases of Naaman and Gehazi, 2 Kings, v. 27, also similar to first case quoted.

16. The case of Azariah, 2 Kings, xv. 5. There is no description given, so if it be affirmed that the case was one similar to the "Lepra Araborum" of the present day, it can neither be proved nor disproved. His dwelling "in a several house" proves nothing.

17. The case of Uzziah, 2 Chronicles, xix. 20, *may* have been a case similar to the present "Lepra Araborum," or it may have been an obstinate case of "Porrigo Favosa," or any other disease of equal obstinacy.

I take no notice of the cases mentioned in the New Testament, as they have nothing to do with the subject, and are not described. Even if they were, it would have no interest, as it seems to me that the "laws and tokens" laid down in the 13th chapter of Leviticus are the *only* rules for "discerning" a leprosy.

I am quite aware of the imperfect manner in which I have performed my task; but all I wish to prove is, that neither the "Elephantiasis Græcorum," (Lepra Araborum,) nor any other *particular* disease, is entitled to the appellation of *the* leprosy. I might adduce many arguments in support of this opinion, but I think those already advanced are sufficient.

ART. VI.—*Herniary Protrusion of the Stomach into the Cavity of the Chest.* By C. H. SPILMAN, M.D., of Harrodsburg, Kentucky.

JOHN BULL, a free man of color, on the night of the 22d of May, 1857, was stabbed in the left side; the knife entering between the seventh and eighth ribs into the cavity of the chest, passing through the diaphragm into the abdomen, and making an incision in the diaphragm of about two and a half inches in length.

Twenty minutes after the wound was inflicted, I found him much exhausted from loss of blood. Immediately afterwards my friends Drs. Moore and Jones arrived. A portion of the omentum, three inches in length and two in width, protruded from the wound. Finding its connection very slight, and its return *in situ* impracticable, we removed it, applied some loose dressings, administered fifteen grains of calomel and one grain of ipecac., and left him for the night, with the wound dependent.

23d, A.M. Pulse 106; restless and feverish; irritable stomach; bowels not moved; abstracted twenty-four ounces of blood; directed an infusion of salts and senna through the day; enema repeated at intervals of two hours. Two or three pretty copious alvine evacuations in the evening. More quiet, and spent the night in tolerable comfort.

24th, eight o'clock A.M. Pulse 106; some thirst; stomach somewhat irritable; yet the symptoms, taken in the aggregate, rather promising.

Six o'clock P.M. Pulse 110, and tense; sick stomach, with occasional vomiting; pain in the epigastric region; no tenderness on pressure, nor abdominal tumefaction; on the contrary, rather a sunken condition of the abdomen; surface but little above the natural temperature, and harsh and dry. Drew off a few ounces of blood, and gave a full anodyne.

The three succeeding days but little variation in the symptoms. Complained but little of sick stomach; its contents were continuously ejected, not by any active expulsive effort, but by simple regurgitation.

On the sixth day (28th) the tendency was manifestly downward. Pulse 140; expression anxious; thirst insatiable; features sharp; bowels immovably constipated. We were exceedingly puzzled at witnessing these fearfully ominous symptoms, which pointed unmistakably to serious lesion of the abdominal viscera, with the entire absence of tenderness and tumefaction, its invariable accompaniments.

From this period to the day of his death, which occurred on the second of June, every effort to procure an action from the bowels proved unavailing. The stomach received food, water, and medicine, but seemed only a passive receptacle, and nothing passing beyond, and being kept in a constant state of repletion, the regurgitation seemed simply an overflow of that organ.

Autopsy.—The sternum elevated by a section of the cartilages as high as the first rib, a longitudinal incision through the parietes of the abdomen, extending as low as the umbilicus, and the removal, by the saw, of the anterior half of the fourth, fifth, sixth, seventh, and eighth ribs on the left side, exhibited a spectacle which fully accounted for the train of morbid phenomena, previously so perplexing and inexplicable. The stomach was found to be greatly distended, and lying in the cavity of the chest, in immediate contact with the apex of the heart and left lung. It had passed by a herniary protrusion through the small incision in the diaphragm, imposing a stricture upon the orifices, and complete occlusion of the pylorus.

The entire organ embraced within the stricture, distinctly marked and limited by its site, was of a dark mahogany color, indicating vascular as well as alimentary obstruction, and presenting all the characteristics of protruded bowel as in cases of strangulated hernia. It contained a large quantity of greenish-black fluid, almost inodorous, suspending, in an unchanged state, portions of the various articles of food that had been taken since the wound was inflicted.

Finding here sufficient to account for the death of our patient, and that anomalous combination of symptoms which marked the case, we prosecuted the examination no further.

The case suggests some curious questions: and

1st. Did the displacement occur at the time the injury was received, or at some subsequent period?

2d. By what internal force could an organ, the size of the stomach, have passed through such a small aperture?

3d. Whether, with a certain knowledge of the dislocation at the time, its reduction by surgical interference was practicable?

These are questions to which we have not, as yet, been able to find a satisfactory answer.

ART. VII.—*A Case of Fracture of the Upper Jaw-Bones.* By C. S. FENNER, M.D., of Memphis, Tennessee.

FRANCIS PRATT, aged forty-five years, one of the injured survivors of the terrible explosion of the boilers of the steamer Pennsylvania, arrived in this city on the morning of the fourteenth of June, about twenty hours after the accident, and came under my charge, associated with Drs. Price and Hawkins. Mr. Pratt received a blow on the face from a fragment of the wreck, which divided the soft parts from the zygomatic arch to the centre of the upper lip, and separated the superior maxillary bones, together with the malar bone on the left side, from their bony attachments, except a part of the nasal processes, which were broken off, and remained in place. The upper jaws were separated at their junction, through the alveolar and palatine processes. From Dr. Burton, who was on the boat that brought the sufferers to Memphis, I learned that, when he first saw Mr. Pratt, the superior maxillary bones were turned outward, the grinding surfaces of the crowns of the teeth resting against the mucous membrane of the cheeks. Dr. Burton replaced the bones, but having no attachments except by mucous membrane, they dropped down against the lower jaw, and followed its motions. The inferior maxilla had an oblique fracture on the left side, between the lateral incisor and bicuspid teeth; and, although the articulations were uninjured, the bone remained considerably depressed, owing to the great swelling of the soft parts, and could not be brought to its natural position. The upper jaws were placed in apposition, and kept together by means of a wire twisted around the teeth. The lower jaw was treated in the same manner, a splint of binder's board adapted to the parts, and Barton's roller applied. A piece of cork was placed on each side, between the teeth, to keep the superior maxillary bones elevated to their natural position. At the end of three weeks they were so firmly united as to remain in place without the corks, and in six weeks firm bony union had taken place. The lower jaw did not so readily unite. An abscess formed near the fracture, and the parts became so painful that he could not bear the wire twisted sufficiently tight to hold the fractured ends of the bone together. The abscess was opened, and several spiculæ of bone were discharged, after which the wire was reapplied; but at the time of his leaving here, two months after the injury, bony union had not taken place.

This case is interesting, as it shows the great injury that may occur to the facial bones, and yet be followed by a speedy recovery.

Bi-Monthly Abstracts;

OR, BI-MONTHLY NOVELTIES IN MEDICAL, PATHOLOGICAL, SURGICAL, OBSTETRICAL, PHYSIOLOGICAL, AND CHEMICAL SCIENCE.

SURGERY.

BY SAMUEL W. GROSS, M.D.

I.—*History of the Compressed Sponge as a Remedial Agent for the Treatment of Strictures of the Rectum, Urethra, etc.; also, of Morbid Growths and other Affections.* By J. P. Batchelder, M.D. (New York Journal of Medicine, May, 1859.)

The author of this paper has, of late years, devoted much attention to the treatment of surgical affections by the compressed sponge, but seems to place more confidence in the article than it probably deserves. The most remarkable portion of his paper is that pertaining to the treatment of malignant tumors: one case of scirrhous breast, two of cancer of the lower jaw, and one case of cancerous inguinal glands being perfectly cured, while several other cases were much improved. For the details of these cases we must refer to his article, of which the following is a brief abstract:—

In preparing the plates of sponge, Dr. Batchelder uses a fine and dry article, and compresses it by means of a common copying letter-press, or a heavy weight, under which it is to be kept until wanted for use. The other form is that of a tent, which is made by transfixing a fine wet sponge with an awl, and wrapping it firmly with a cord or packthread; when it dries, the awl is removed, and the tent is ready for use; or the sponge is moistened with mucilage, and prepared in the same manner, being, when dry, trimmed smooth with the knife. The latter is applicable to cases in which the tent is difficult of introduction, and the moisture of the parts might produce its premature expansion, as in dilatation on the canal of the neck of the uterus. When employed in internal parts, the tent should be attached to a cord to facilitate its removal.

The author first applied compressed sponge, with marked success, to enlargement and abscesses of the female breast, and reports of cases, published in late years, fully confirm its utility. The object of the present paper is to point out the various surgical affections in which it may be employed.

1. *Dilatation of the Canal of the Cervix Uteri for the relief of Sterility, difficult Menstruation, and other Affections.*—The tent, prepared with mucilage, is carried up to the os with a pair of long-bladed forceps, or a stilet, constructed expressly for the purpose, and, by slight pressure upon its base, is made to enter the cervical canal. It should be removed every twenty-four hours to prevent irritating and offensive secretions, and the vagina should be well syringed with water. The speculum will sometimes be useful; and as the canal

of the cervix is occasionally very small, it will, as a preliminary measure, be necessary to enlarge it with fine metallic dilators, until a small tent can be introduced. When the object is to induce premature labor, the tents should be worn continuously, and be gradually increased in size. In pregnancy, complicated with hemorrhage, when the os is partly open, but unyielding, and the labor is tardy, the tent, by making a good tampon, stops the flow of blood, excites the dilatation of the os, and also uterine contractions.

2. *Dilatation of Sinuses.*—In most cases of sinuses the sponge-tent, by producing a change in their lining membrane and a free purulent discharge, effects a cure. From time to time the tent should be made larger.

3. *Anal Fistule.*—In abscess of the ano-rectal region, a free and early incision should be made, and a sponge-tent introduced to favor the free discharge of pus and the healing of the cavity from the bottom. When the abscess has opened spontaneously, and formed an incomplete fistule, a tent introduced into the cavity fulfills the same indications, and by keeping the external orifice open, prevents the collection of pus, which, by its pressure, would produce the absorption of the septum between the rectum and cavity of the abscess, and thus producing an internal orifice, a complete fistule would be formed. When, therefore, there is no internal opening, the method will be found successful.

4. *Diseased Bone with Fistulous Passage.*—In most of the cases of caries or necrosis of the bones in which the author has tried the sponge-tent, a cure has resulted without a resort to the knife or scraping instruments. In a few weeks the sinus can be dilated to such an extent as to admit of the introduction of several fingers, or a pair of forceps, for the removal of the sequester or the ulcerated bone, by the repeated application of the sponge. Several cases of strumous or syphilitic enlargement of the bones have been cured by plates of compressed sponge, aided by appropriate constitutional remedies.

5–6. *Dilatation of the Meatus Auditorius, and Affections of the Nasal Cavities and Bones.*—In cases of contraction of the external auditory canal, the sponge-tent may be used with advantage, as well as in ulceration, contraction, and other affections of the nasal bones and cavities.

7. *Dilatation of Strictures of the Rectum.*—The author mentions three cases of rectal stricture treated with the sponge-tent, one proving fatal, as the disease was malignant, the other two being cured. The tent should be prepared with mucilage, if there be much irritability, being used larger as occasion requires. When the irritability and sensitiveness of the part are great, it will be well to precede the use of the tents by anodyne suppositories.

8. *Internal Piles.*—The tent, introduced just within the rectum, may prove useful in bleeding piles, or hemorrhage of this portion of the intestine.

9–10. *Stricture of the Urethra and Dilatation of the Female Urethra.*—In cases of urethral stricture a metallic sound should first be pressed against the resisting part; when being withdrawn, a tube, containing a transfixed tent and a piston, is carried down, and by pressure on the piston, the tent is made to enter the stricture. When it is firmly in place, a few drops of water, or if there be irritability, of an anodyne solution, are passed down the tube to moisten the sponge. The cord attached to the tent should be guarded with a button to prevent its passing back into the bladder. It is best to allow the expulsory power of the bladder, in micturition, to remove the tent; should this not succeed, gentle traction may be made. When it is deemed necessary to dilate the female urethra for the removal of foreign bodies from the bladder, the sponge-tent will be found to answer every purpose.

11. *Morbid Growths.*—The compressed sponge, by its firm and equable pressure, induces the absorbents to remove tumors, whether benign or malignant, and should be confined in its place by the bandage, both being kept constantly wet. In case of malignant growths, if not removed entirely, they may be rendered harmless for years; and the author reports, in support of this opinion, a case of scirrhous tumor of the breast, completely cured in about two months; a case of scirrhous growth of the breast and a scirrhous nodule on the outer edge of the pectoralis major, in which the nodule entirely disappeared, and the tumor of the breast had greatly diminished, when the patient was lost sight of; a case of ulcerated malignant tumor of the breast, with well-marked cancerous cachexia, in which a sponge-tent was kept in the fistule, dilating it to a large size, with the result of a diminution of the tumor and a great improvement in the general health. The patient was lost sight of, but probably died. In three other cases of malignant disease of the breast, it produced diminution of the tumors, and prolonged life. In two cases of malignant disease of the lower jaw, (epulis?) both patients were cured. It has also been found useful in the removal of the callous edges of ulcers.

12. *Cancer of the Penis, with enlarged Glands of the Groins.*—The penis was amputated, and the glands removed with the compressed sponge; the patient's health was much improved, and the cancerous cachexia disappeared.

13–14. *Swelled Testicle and Vegetations.*—The testicle or penis is to be turned up over the pubes, and retained in position by the spica bandage, which, with the sponge, is kept constantly wet. The author has great confidence in emesis in the case of swelled testicle, and in that of warty excrescences he draws off the urine with a flexible catheter, so as not to disturb the dressings.

15. *Non-malignant Tumors.*—Enlarged lymphatic glands, especially buboes, are speedily removed by this means. Dr. Batchelder states that, in the last fifteen years, he has had but two cases of suppurative bubo, and these were owing to the imprudence of the patients. In addition to the sponge and bandage, in these cases, he recommends a hernial truss with a glass pad and strong spring, the pressure being properly graduated.

16. *Enlarged Joints.*—In cases of effusion within the joints from synovitis, or in effusion from any cause outside the joints, the sponge has succeeded, especially in the latter, better (in the author's hands) than any other means.

17. *Compressed Sponge as a Styptic.*—In wounds of certain arteries it is not always practicable to apply a ligature, and the surgeon relies, for a time at least, on compression. In regard to wounds of the palmar and plantar arteries, the author says: "The phenomena attending these wounds are often somewhat peculiar. The blood forced extensively into the surrounding cellular substance, perhaps under the aponeurosis, comes welling out from a considerable surface, which renders it quite difficult to find the wounded vessel. If this surface be scraped again and again with the handle of a scalpel, the extent from which the

blood issues will be lessened down to a small space." Upon this he places a small piece of pointed compressed sponge, confining it by means of a compress and a roller, and flexes the arm at an acute angle, a position which renders pulsation at the wrist almost imperceptible.

18. *Pachydermatocele.*—This affection, first described by Dr. Mott, is congenital, and consists of a hypertrophous condition of the skin and subcutaneous cellular tissue. Dr. Batchelder has seen three cases of this disease, which were operated upon by Dr. Mott, and in all the affection returned. After its recurrence in one of these cases, in which the mass hung in folds on the side of the face, the author applied, not without some difficulty, the compressed sponge and roller. In about two months, the whole mass, excepting a small portion near the eye, which had resisted the treatment more than any other part, had become absorbed, and the patient, thinking the rest would disappear, ceased to consult the author. In a few months, however, he returned, the mass being larger than before. A renewed and persevering application of the same means effected a cure.

19. *Varicose Veins.*—In one case the author applied the compressed sponge over the internal saphenous vein, and confined it by a vulcanized India-rubber bandage. The dressings were worn only through the day, and had the effect of relieving the symptoms, and rendering the patient's locomotion much more comfortable. It is not stated whether a cure was effected.

II.—*Some of the Causes which have occasionally rendered Excision of the Knee-joint more or less unsuccessful.* By P. C. PRICE, Esq. (Med. Times and Gazette, Nos. 459, 460, April, 1859.)

This interesting surgical contribution will be found to contain all the cases of excision of the knee-joint that have occurred in Great Britain during the past eight years, that is, during a period extending from July, 1850, to the end of 1858. They amount to 160, and from these the author shows some of the causes of failure from the operation, and other valuable facts, thus lending his assistance in giving this operation the position to which its importance undoubtedly entitles it.

Of these cases, the mortality was in the ratio of one death to five recoveries, thirty-two cases proving fatal; the result being the same as that obtained by Mr. Butcher in one-half the number of cases. The age of the youngest patient was three years, and that of the oldest forty-seven years. Of the entire number but six or seven were operated on for deformity, and one only for accident, leaving 152 cases in which the procedure was instituted for extensive destruction of all the structures of the joint. In some of these it was practiced as a final resort, and in some amputation should have been performed. Taking, however, all the cases into consideration, the different surgeons had evinced nice judgment in the selection of their subjects. When the operation was completely unsuccessful, it terminated either in death or in amputation of the limb; when partially so, the member remained more or less useless. In eighteen cases amputation was required at a period more or less remote from the primary operation, and in one instance only was the result fatal.

The causes of death in the 32 fatal cases were in 8 pyæmia, in 6 exhaustion, in 5 irritation, in 4 shock, in 1 dysentery, in 1 suppression of urine, in 1 pleuro-pneumonia, in 1 erysipelas, in 1 peritonitis, in 1 acute phthisis, in 1 after-amputation, and in 2 the causes were unknown. The age of the youngest patient who died from one or the other of these causes was five years, that of the oldest thirty years.

From the above it will be seen that pyæmia was the most frequent cause of death, proving fatal in one-fourth of the cases. Mr. Bryant has lately pointed out that pyæmia was the principal source of fatality in 300 amputations of the upper and lower extremities, in 43 per cent. of all fatal cases, and in 5·4 per cent. of all pathological amputations.

In comparing the results of amputation for disease with those of excision of the knee-joint, it will be perceived that the percentage of recoveries is in favor of the latter. Thus, Mr. Teale has shown that in 160 amputations of the thigh, for disease, in the London hospitals, during a period of three years, 38 proved fatal, or 1 in 4½; and of 134 amputations of the thigh, for disease, in the provincial hospitals, during the same period, 33 resulted in death, or about 1 in every 4 cases. As before stated, the mortality of excision of the knee joint is in the proportion of 1 death to 5 recoveries, which corresponds to the statistics of Guy's Hospital, as drawn up by Mr. Bryant, who states that "1 case in 5·5 was about the proportion of fatal terminations in pathological amputations. For chronic disease of the articulation, amputation was more favorable, the mortality standing at about 1 in every 7 cases."

Of the wholly unsuccessful cases which were not attended with death, it was found necessary to amputate the thigh in eighteen instances, with the remarkable result of only one death. The causes requiring this measure were,—

1. "The occurrence of non, or insufficient union, associated with abscesses of the soft parts, with necrosis of the ends of the bones." This condition is owing to the want of a proper selection of cases; thus it is well known that those cases of tubercular infiltration of the extremities of the bones, leading to the destruction of the joint, are never suitable to an operation, as osseous, or even fibrous union, will seldom take place, and the limb will be the seat of persistent sinuses, which, by exhausting the patient's system, will imperatively call for the removal of the limb.

2. "The existence of abscesses, more or less acute, accompanied with hectic, night-sweats, diarrhœa, etc." For the local complications and the constitutional disturbance, amputation was required in eleven cases, the earliest operation being nine days after the excision, the latest two years and three months.

3. "Erysipelas and other specific affections, as measles, etc." General diseases and erysipelas required amputation in four cases, all of which made good recoveries.

4. "Inappropriate management of the limb during treatment." In three instances amputation was performed on account of bad management of the limb and the impossibility of keeping the extremities of the bones in apposition. It is a matter of the utmost importance to maintain the limb in a proper position during the after-treatment, and this being well attended to the frequency of amputation will be diminished.

Partial success has often followed the excision of the knee-joint, the limb being more or less useless as regards locomotion, although the deformity or disease may have been removed. The causes of the partial success are,—

1. "Imperfect union of the divided ends of the tibia and femur arising from a peculiar diathesis pervading the constitution." Mr. Price states it as his opinion that when the cancellated structure of the bones is much involved in the disease, the bond of union will at first be fibrous and flexible, which, at a later period, may become bony in its nature. It is not necessary, as is generally supposed, that bony anchylosis should take place for a good use of the limb, although such an occurrence is not infrequent.

2. "From the non-maintenance at rest, or inappropriate treatment of the part immediately concerned in the operation." As before stated, the perfect quietude of the part, and a suitable mechanical after-treatment, are indispensable to a proper uniting medium. Without attention to these points nothing can be expected from the operation.

3. "From taking away too great an amount of bony structure." The surgeon should be very cautious, especially in the case of children, not to remove the whole of the epiphyses of the bones, as by so doing arrest of development will be sure to follow, and as the patient advances in years, the limb will become shorter than the sound one. Attention to this point must, therefore, be insisted upon.

4. "From the occurrence or persistence of abscesses in the soft tissues only, or complicated with disease of the bone." This complication is a common occurrence in children, especially when there is a scrofulous taint of the system. Dead bone, or the remains of diseased synovial membrane, will favor the occurrence of sinuses and abscesses, which will, however, yield to a judicious and persevering treatment.

Swelling of the ankle and leg is rather a common occurrence, but need not give rise to any fear as to the result of the operation, as it will generally disappear by appropriate management.

III.—*On Two Modifications of the Operation for Cataract.* By Dr VON GRAFE. (Communication made to the "Verein der Berliner Aerzt." Allgemeine Medizinische Centralzeitung, 20, 1859.)

One of the most common operations for cataract, that of extraction and the formation of a large flap, affords about ten favorable results in twelve cases; in one case only a partial restoration of sight is procured, and in the other suppuration of the eye is caused by loss of the flap. Division of the lens, which has been proposed as a substitute to the above method, is only applicable in cases where the lens is capable of being absorbed; when the nucleus of the lens is hard and yellow, it is apt to be followed by iritis, and must, under such circumstances, give way to extraction. In the operation of reclination the lens acts as an irritant, and produces internal ophthalmia, increase of intra-ocular pressure, excavation of the optic nerve, and amaurosis. The statistics of the operation show that vision is preserved in only one-half of the cases. In old persons, therefore, extraction with the formation of a flap should be preferred to all other operations, which may, however, be used in exceptional cases.

The dangers of extraction are owing to the extensive flap of the cornea, on account of which comparatively little tissue is left for the supply of nourishment, which evil is further increased, and the mortification of the flap is favored by the contusion produced by the lens on its escape. This latter difficulty is obviated by the linear section; but this is only applicable in cases of soft cataract, as in hard ones the frequent introduction of Daniels' scoop causes dangerous irritation of the iris.

In order to render the linear section applicable to a greater number of cases, Dr. Von Gräfe has made the following modification: The linear incision is made in the sclerotica in such a manner as that the inner cut occupies the border between the sclerotic and cornea; the *iris is then drawn out and a portion of it snipped off, so as to form a broad coloboma.* A broad Daniels' scoop is pushed behind the lens, which, being broken up into small pieces, is removed, without fear of subsequent irritation of the iris. This operation is suitable to soft cataracts with a moderately large and hard nucleus, and is to be preferred in old persons, in whom the state of the constitution would give reason to apprehend mortification of the cornea in the flap operation of extraction. The coloboma, which has but little influence on the sight, should be made on the temporal side instead of above, where it would be less visible, but would, in this situation, render the different steps of the operation more difficult.

The second modification proposed by Von Gräfe has reference to the operation of division of the lens. The operation consists in making an upward coloboma, eight days before the division of the lens. This preparatory measure has, as Von Gräfe alleges, the advantages of being followed by less swelling of the lens, one of the dangers of the other operation; larger wounds can be made in the capsule, and absorption takes place more readily, being effected in from four to six weeks, while in the simple operation of division it takes as many months.

IV.—*A New Mode of Dressing in the Wounds of Amputation.* By M. LAUGIER. (Journal de Médecine de Bordeaux, June, 1859, and Comptes Rendus de l'Académie des Sciences.)

The objections made by the author to the ordinary manner of dressing stumps with the roller and adhesive strips, are that the bandage does not fulfill the indication of causing the flaps to unite from the bottom, that its compression, which must be moderate for fear of producing strangulation of the stump, yields to the weight of the limb, placed on the pillow or bed in such a position as tends to separate the lips of the wound, and that on account of its becoming loose it has often to be reapplied. The inconveniences of the adhesive strips are that they push back the fleshy portion of the flaps, and thus tend to favor the protrusion of the bone and the formation of a depot of pus; they sometimes cause erysipelas, and do not give an equable support to the part, which should be made to heal from the bottom toward the edge of the wound, or from behind forward.

With a view to maintain all portions of the flaps in accurate apposition, and to bring about immediate union, M. Laugier proposes to place under the bandage two plates of cork, of two lines in thickness, and of a length and width sufficient to permit it to embrace nearly the whole stump, from its base to its apex, and allow it to extend about two and a half to three inches over the free extremity of the stump. Its edge is then digitated and pierced with a number of openings to receive a piece of tape, which brings the opposed surfaces together at the end of the dressing. Previous to applying the cork, the stump is encircled by thick, circular pieces of amadou or tinder, which serve the purpose of rendering the pressure more easy and efficacious, and keeping the digitations of the cork from the parts. A pledget of lint, spread with cerate, is then placed on the wound, and the opposite portions of the cork are approximated by tying the pieces of tape. No sutures are used. The stump is thus enveloped in a firm case, which keeps off pressure from the wound, and permits the patient more easy and free motion. At each dressing it is not necessary to take it off; the tapes are untied and cleanliness is effected.

The advantages claimed by M. Laugier are that the dressing causes union from the bottom of wounds made in amputation of limbs in their continuity, it sustains the fleshy portions against the bone, insures the direction given to the lips of the wound, does away with the inconveniences of adhesive plaster, and, finally, it protects the stump from exterior shocks, and gives greater latitude to the movements of the patients and the amputated limb.

V.—*I. Report of Five Cases of Fracture of the Vertebræ.* By CHARLES PHELPS, M.D., House Surgeon to Bellevue Hospital. (New York Journal of Medicine, January and March, 1859.)

II. A Series of Cases of Injury of the Spine. By F. BIRKETT, Esq. (British Medical Journal, March 26th, 1859.)

In these ten cases we find many points of interest in regard to the symptomatology and treatment of fractures and dislocations of the vertebræ, and the effects produced by such injuries on the spinal cord. Two of these cases only eventuated in recovery, thus showing how little can be expected from treatment, however judiciously selected. In the second case, the depressed portion of bone was removed, an operation which was first performed by Mr. Cline, of London, and which has also been resorted to in this country by Drs. Smith, J. Rhea Barton, and Goldsmith. Altogether, it has been done about a dozen times with no marked benefit, and yet it should always be tried when deemed advisable.

I.—CASE 1. *Fracture and Luxation of the Seventh Cervical Vertebra; death at the expiration of a hundred hours.* (Service of DR. WOOD.) An Irishman, thirty years of age, of intemperate habits, but good constitution, fell down a flight of stairs, striking upon his back, and was rendered insensible for a few moments. Upon the return of consciousness, he felt some numbness and incapacity for motion, but labored under no symptoms of injury of the spine or head. On admission, twenty-four hours afterwards, an examination showed complete paralysis and loss of sensibility of the entire body below the third rib. Sensation was perfect in both arms, but power of motion was lost in the left. The patient rested on his back, with the head and neck thrown forward, the latter of which was tender on pressure posteriorly. The respiration was abdominal, the temperature normal, the pulse but little affected, the penis was erect, and the fæces and urine had not been passed since the accident. On the following day a bedsore began to form on the nates, the temperature of the body was increased, the respiration was embarrassed and ten to the minute, and the speech was quick and abrupt. The bedsore was attended to, and a grain of morphia was administered every two hours during the day. On the following day the condition was much the same; the tympanites had increased, there was some hematuria, and he could retain but little nourishment. The morphia was continued, and an enema ordered. During the evening there was great dyspnœa; the injection had acted, and the hematuria ceased. On the next day there was dullness at the lower portion of the right lung, but no difficulty in breathing, and he was at times delirious. At seven P.M. both arms were devoid of sensibility, and paralyzed, the urine was high colored, and the tympanites increased. At nine o'clock he was unconscious; the body was hot, pulse full and strong, eyes suffused, and the lower jaw moved convulsively. In three hours he quietly died; and, on a post-mortem examination, there was found a complete transverse fracture of the seventh cervical vertebra and of its right transverse and articulating processes, with rupture of the ligamenta subflava. The bone was luxated backward, but the cord was not lacerated. The brain was slightly congested, and the medulla oblongata in a greater degree. The other organs were healthy.

Case 2. *Fracture of the Body of the Tenth Dorsal Vertebra; operation for the elevation of the depressed portion; large effusion of blood within the theca; death.* (Under the charge of Dr. Stephen Smith.) An Irishman, forty-one years of age, of temperate habits and good constitution, on the twelfth of October was thrown from his cart, striking upon his back, and did not feel hurt until he was moved, when he suffered great pain, and found that he was paralyzed. He was admitted into the hospital two hours after the injury, in a collapsed state, the pulse being exceeding frequent and feeble, and the respiration eighteen a minute. The whole body was paralyzed and devoid of sensibility below the sixth intercostal space; there was severe pain in the back of the neck, although no bruise could be discovered, and numbness and tingling pain in the arms. The penis was slightly erect, the temperature of the body was natural, and a space of about an inch and a half in width was discovered between two of the spinous processes of the dorsal vertebræ. Stimulants and anodynes were freely used, and the urine was drawn off with a catheter.

On the following morning the pulse was 112, the respiration 26, and mainly abdominal, the temperature of the body was exalted, and the pain and numbness in the back and arms increased. In the afternoon sloughs had commenced on the feet, and, upon a consultation, it was determined to trephine the vertebræ. The patient being under the influence of chloroform, Dr. Smith made an incision six inches in length over the dorsal vertebræ, and found the subcutaneous cellular tissue filled with extravasated blood, and the lamina of the right side of the tenth dorsal vertebra depressed. This was removed with the trephine, and was followed by an escape of from six to twelve ounces of dark blood. The case soon terminated fatally, and an autopsy revealed "a fracture of the body of the tenth dorsal vertebra upon the right side, extending from the base of the transverse process half way to the mesian line anteriorly, without displacement—fracture of the arch of the vertebra upon the right side, with depression, and extravasation of blood to a large amount, extending from the lower cervical vertebra to the sacrum. Considering the increasing paralysis, the extravasation was probably still extending upward at the time of the death of the subject."

CASE 3. *Fracture and Luxation of the First Lumbar Vertebra; union of fracture; death after thirty-seven days.* This case, under the care of DR. STEPHEN SMITH, occurred in a healthy Irish woman, thirty years of age, who, on the evening before her admission, while asleep, fell out of a third-floor window, striking her left side upon a slate-roof two stories below. She was not rendered insensible, nor had she, previous to her admission, any symptoms of spinal lesion, excepting intense pain upon motion, and numbness in her left leg. An examination showed a backward displacement of one of the lower dorsal or upper lumbar vertebræ, with slight tenderness lower down. The respiration was natural, and the pulse a little frequent. For a few days the urine was drawn off, but soon passed involuntarily. A bedsore formed on the sacrum, which finally exposed the bone; the pain on motion gradually diminished, and at no time was there paralysis or insensibility of the body or extremities. Diarrhœa, however, supervened, and the patient died from exhaustion, thirty-seven days after admission.

Upon a post-mortem examination, the body of the first lumbar vertebra was found crushed, and the bone was completely dislocated backward. The fractured bone had thoroughly united.

CASE 4. *Luxation and Fracture of the Seventh Cervical Vertebra; resulting in death.* (Under the care of DR. WOOD.) A robust, but intemperate Irishman, forty-two years old, was admitted into the hospital on the sixteenth of July, having the evening before been thrown from his cart upon his head and back, with the effect of immediately paralyzing his limbs and causing severe pain, especially on motion, in the lower cervical region. He had cramps in his left leg, and his bowels and bladder were evacuated voluntarily. The paralysis was complete below the clavicles; the intellect was clear; there was some dyspnœa; the respiration was 20, and mainly abdominal; and there was no pain in the back of the neck, except on motion. Beef tea and port wine were ordered, and during the evening the patient was comatose. On the following day, at ten in the morning, he was still comatose, and at three P.M. the face became turgid, the eyes protruded, the lips were purple, and three quarts of blood flowed from the mouth. He died without any convulsions. The coroner refused permission to hold an autopsy.

CASE 5. *Fracture and Luxation of the Fifth Cervical Vertebra; recovery.* (Service of DR. STEPHEN SMITH.) An Irishman, twenty-nine years of age, and of good constitution, in September, 1856, while intoxicated, fell down a flight of stairs, striking the back of his head and neck, being rendered unconscious and remaining so for three hours. He had no paralysis, anæsthesia, or other symptom of lesion of the spine, but experienced pain in the neck on motion, and suffered from cephalalgia.

In August, 1857, he was again admitted on account of the pain in the head, which had never left him. Upon examination externally, Dr. Smith found the fifth cervical vertebra luxated forward, and the bone could be felt forming a large prominence in the pharynx. The neck was firm in its new position, which was awkward, and he had some difficulty in swallowing solid food.

II.—CASE 1. *Dislocation and Fracture of the Third Cervical Vertebra; death.*—A strong, muscular man, thirty-two years of age, fell down stairs, while intoxicated, and was placed in bed in a perfectly helpless condition. He was admitted into Guy's Hospital on the following evening in a collapsed state, with great difficulty of breathing. There was complete paralysis and anæsthesia of the body below the clavicles, and his bladder was distended. He reacted slightly, but died at the end of thirty-six hours.

On an autopsy the neck was found to be contused, the third cervical vertebra was luxated, and the anterior common ligament ruptured. The laminæ of the second and third vertebræ were broken and movable, and the right lamina of the atlas was fractured at its root. The cord was crushed and nearly torn across at the site of the dislocation; the lungs were congested, and the bronchia filled with bloody mucus.

CASE 2. *Dislocation of the Fourth Cervical Vertebra; death.*—A male, seventeen years of age, during a fight of two hours duration, was thrown to the ground, and found some hours afterwards by a policeman. When admitted he was sensible, and the whole body below the neck was paralyzed; the breathing was abdominal and much embarrassed, and there was some sensation over the shoulder and upper part of the chest. He gradually sank, and died thirteen hours after the accident. On a post-mortem examination the muscles of the neck were found contused and ecchymosed; the fourth and fifth cervical vertebræ were separated from each other, and the ligaments ruptured. There was no fracture, and the membranes of the cord were uninjured, but the marrow was pulpified and filled with blood. The lungs were much engorged, and the bronchial tubes contained blood.

CASE 3. *Fracture and Dislocation of the Eleventh and Twelfth Dorsal Vertebræ; death in four months and a half.*—A stout Irishman, thirty-one years of age, fell down the hold of a ship, striking upon his back, which caused paralysis and anæsthesia of the lower extremities. The two lower dorsal vertebræ were found to have been injured, and the fascia was stripped off several of the dorsal spines. He was suffering intense pain; and while under the influence of chloroform, extension was applied, but without effect. On the third day he had some feeling in his legs, but no motion; suffered great agony on the slightest movement, and was withal cheerful, and had a good appetite. The urine was drawn off twice a day, and croton oil was administered to relieve the costiveness. In a month, bedsores had formed, and he gradually sank, and died four months and a half after the reception of the injury.

An autopsy revealed complete separation of the eleventh and twelfth dorsal vertebræ, with fracture of their articulating processes. The cord was disintegrated, softened, and of a brownish color at the point of injury; the bedsores over the sacrum had exposed the spinal canal, and the kidneys were filled with pus.

CASE 4. *Fracture and Dislocation of the Twelfth Dorsal Vetebra; death on* *the eleventh day.*—A laborer, twenty years old, fell through a trap-door, and in attempting to walk, felt great pain in the loins, and had no use of his legs. The constitutional disturbance was considerable, and the bladder was paralyzed. On the night of admission he vomited several times, and the bowels had not acted. During the next four days, high constitutional symptoms supervened; he passed bloody urine, and gradually sank until the eleventh day, when he died. Stimulants, nourishment, and opium, formed the treatment.

On a post-mortem examination, the eleventh dorsal vertebra was found to be slightly luxated, its body crushed and broken in half, and its arches fractured and quite movable. The cord was softened, crushed, and inflamed opposite the injury, and the bladder was ulcerated and covered with phosphates.

CASE 5. *Fracture of the Spine about the Eleventh Dorsal Vertebra; recovery.*—A healthy laborer received a blow upon his loins from a heavy sack falling from a height of about nine feet, while he was in a stooping position. He was immediately rendered powerless, and had no feeling in his legs. On admission, he was sensible; both legs were paralyzed, the left having no sensation, and the right being excessively sensitive. The urine had to be drawn off with a catheter, and on the third day the feeling in both legs was almost natural. In three weeks he passed his urine voluntarily; and in six weeks he was able to move his toes slightly. At this time, upon examining the back, the spine of the eleventh dorsal vertebra was found much displaced. He continued to improve slowly, and left the hospital in about three months and a half from the time of admission. The treatment consisted in tonics and opium.

VI.—*Cure of a Popliteal Aneurism by forced Flexion of the Knee.* By M. MAUNOIR. (Echo Médicale Suisse, Sept., 1858; Archives Générales de Médecine, July, 1859.)

In our last number we presented to our readers a brief abstract of two papers on the cure of popliteal aneurism by flexion of the knee-joint, and we have now to chronicle another case under the charge of M. Maunoir. The aneurism was as large as the fist, and was seated in the lower portion of the popliteal space. The author perceiving that forced flexion of the leg stopped the pulsations of the tumor, advised the patient to keep the same position, and confined the limb by an appropriate bandage. In a few days the pulsations were less forcible, and in twenty days a cure was effected. But little inconvenience attended the treatment, and when the patient was seen at the end of a year, there existed a small, hard tumor, about the size of a pigeon's egg, in the popliteal region, the remains of the previous disease.

VII.—*On Emphysematous Tumors of the Temporal Region.* By DR. COSTES. (Journal de Médecine de Bordeaux, Oct., Nov., Dec., 1858.)

Professor Costes, of Bordeaux, has undertaken the task of collecting the few and scattered cases of this affection which are on record, and has made them the subject of a very interesting paper. The result of his investigations is contained in the following conclusions:—

1. Although of rare occurrence, emphysematous tumors, extending more or less to the neighboring parts, are observed in the temporal region.

2. They originate in consequence of an erosion or destruction of the exterior lamella of the mastoid process, and are formed by the air, which, in the normal state, is contained in the cavity of the tympanum, and in the cells of the mastoid process, escaping from underneath the pericranium, and filling the meshes of the surrounding cellular tissue. Murray conclusively demonstrated, in 1838, that all the cells of the mastoid process communicate with each other, and open into the cavity of the tympanum.

3. Palpation of such a tumor produces a characteristic crepitating sound. The change in the structure of the bone which gives rise to this tumor manifests itself generally in the form of a pointed projection, an osteophyte, etc.

4. These tumors are, in general, more or less reducible; the reduction takes place with a noise, which the patient distinctly perceives in the respective ear.

5. The cause of these tumors seems to be an excessive development of the mastoid cells, and an extraordinary tenuity of the external lamella of the bone which covers them. The real cause of the structural change in the bone which produces the tumors in question is still unknown.

6. These tumors are developed very slowly, and remain for a long time without giving rise to pain; when they have attained a considerable size they produce troublesome symptoms.

7. Such tumors are in themselves without danger; in consequence, however, of complications, neglect, or wrong treatment, they may become a serious disease.

8. The treatment consists in opening the tumor by a superficial incision, in order to remove the air contained in the cellular tissue, and in bringing about an adhesion between the soft parts and the bone, so as to prevent a recurrence of the infiltration of air. The latter object may be obtained by introducing a small seton, or by making strong compression on the external parts; injections of iodine may also possibly be of benefit.

PATHOLOGY AND THERAPEUTICS.

BY EMIL FISCHER, M.D.

I.—*Bronchiectasis Sacciformis.* By PROF. BAMBERGER.

The causes of sacciform dilatation of the bronchia were formerly considered to be only of a mechanical nature; Laennec and his followers believed them to operate in the interior of the bronchial tubes; Corrigan, on the contrary, and in a measure also Rokitansky, looked for them in the surroundings of the tubes. The latter view has been generally accepted in Germany; but it is as unreliable as that of Laennec. Corrigan's opinion is founded upon a misinterpretation of the state in which the pulmonary tissue surrounding the dilatations is found; in most cases it is not solidified, as he assumes, and cannot, therefore, produce a contraction; experience shows, on the contrary, that very often it contains air. Just as erroneous is the view of the same author, that the sac is a kind of compensation for the empty space produced by the obliteration of the air-cells, for in most cases there are extensive portions of the lung impermeable to air, while the dilatations are confined only to small isolated spots; again, cases are not rare in which the portions of the lung in the neighborhood of the dilatation are found to contain more air than those farther removed from it; sometimes even the pulmonary tissue is completely permeable to air. According to Rokitansky, bronchiectasis is caused by bronchitis, complicated with obstruction of the final terminations of the tubes, and collapse of the corresponding parts of the pulmonary tissue; the portions of the bronchia above the obstruction are dilated. partly in order to fill out the vacant space, partly because the air, hindered in its progress, exercises a pressure upon them. The absence of a current of air in the obstructed bronchia speaks against this theory; besides, it does neither explain the origin of bronchiectasis in cases in which the smaller bronchia are not obstructed, and the pulmonary tissue contains air, nor does it account for the sac-like shape of the dilatation. Laennec's theory, that the dilatation is produced by the long-continued stagnation of the mucus, does not explain its sac-like shape; the contents of the tube must accommodate themselves to the original, cylindrical shape, and such is found to be the case on post-mortem examination. With just as little reason the dilatation is ascribed to the pressure of the air on violent coughing.

According to Professor Bamberger, the cause of the dilatation is an atrophic condition of the bronchial tube, brought about by disease limited in its extent. This view is supported by the fact that the membrane of the sac is extraordinarily thin, and that the longitudinal fibres of the wall are found to have disappeared. This atrophy is the consequence of inflammatory action, which is principally confined to the circular layer of muscular fibres, and thus deprives the bronchia of their support against their fluid and gaseous contents. We find, therefore, the bronchiectasis only after chronic catarrh of the bronchial mucous membrane, and after simple or tubercular inflammation of the pulmonary tissue, but not after independent pleuritic exudations; the catarrh is a more important and frequent agency than the inflammation; the latter seems to produce the dilatation only by the simultaneous existence of the former, but not by the induration attending it, although it is not quite impossible that the inflammatory process might extend from the parenchyma of the lungs to the muscular layers of the bronchia. The surrounding pulmonary tissue is in rare cases only quite normal; commonly it does not contain any air, and is discolored by dark pigment; this is always the case, if the dilatations are large and numerous. This condition is produced secondarily by the circumstance that the mucus accumulated in the bronchial tubes, and the compression made by the dilatation, prevent the entrance of the air into the pulmonary cells. In the higher degrees of the affection we often find, therefore, cavities which have no outlet. The process is thus quite analogous to atelectasis. Real induration and callosities are only found when the tissue contains at the same time tubercular deposit; the bronchial dilatation is then often mistaken for a cavity. In these cases there is no causal connection between the changes in the pulmonary parenchyma and those in the wall of the bronchial tube, but both are consequences of a simultaneous inflammation.

Besides these pathologico-anatomical details, Professor Bamberger gives the following statistical items: He observed, in all, eighteen cases of bronchiectasis in which the symptoms were decided; of these, fourteen were male and four were female patients, their age ranging from five and a half to fifty-nine years; most of them being between twenty and thirty years old. Nine of these patients died; in eight cases death was attributable to the disease itself and its consequences; constitution, occupation, and mode of living were indifferent. Of fourteen cases, four suffered previously of pneumonia, and ten of catarrh, during the course of which the symptoms of bronchiectasis were gradually developed. The principal symptoms of the disease are violent coughing fits, with copious expectoration of a peculiarly fetid and purulent sputa, frequent attacks of hæmoptysis, the physical symptoms of the formation of cavities, and the gradual development of marasmus. The fits of coughing are very violent, resembling in younger patients hooping-cough, and are often accompanied by the discharge, in gushes, of many ounces of quite peculiar, not gangrenous, but offensive, and sordid pus, through the mouth and nose, and by vomiting. Dyspnœa is constant, and is owing principally to the stagnation of the pus, and to exacerbations of the catarrh. If there are but few dilatations, and the surrounding tissue contains air, the physical phenomena consist in a râle, with the formation of large bubbles, which remains confined to a limited spot. Such cases can, therefore, not be recognized with certainty during life. In more aggravated cases, symptoms indicating the existence of cavities make their appearance; they resemble those of tubercular cavities, but differ from them partly by their frequent occurrence in the lower and posterior parts of the lungs, and partly and principally by the rapid changes which they undergo; this change of physical signs is owing partly to the peculiar character of the walls, which are not rigid, but yield to pressure, partly to the absence of ciliated epithelium; coughing is thus the only means by which the secretion can be expelled, but it effects a complete evacuation of the sac. The appearance of the patients remains for a long time healthy; later, however, it resembles that of an individual suffering from tuberculosis. Slight dropsy is very common toward the end of the disease; albuminuria was observed only in three cases. The lighter forms of bronchiectasis are not dangerous to life, but more aggravated cases have generally a fatal termination; this is, however, not always the case. Professor Bamberger has observed a cure in a girl, who suffered from an ectasis in the inferior lobe of the left lung; adhesions having formed between the lung and anterior wall of the thorax, it opened externally, and was afterwards obliterated. In three cases the author observed ulceration of the ectasis, with destruction of the pulmonary tissue.

The ectasis generally affects both lungs, especially the inferior lobes; in nearly all cases cylindrical dilatations and catarrh, with thickening of the wall of the bronchial tube, were found to coexist; tubercles were not present in any case.

The treatment consist in a strengthening diet, and the inhalation of the air of mountains and woods; expectoration should be aided by occasionally giving an emetic; in order to correct the fetor, and to reduce the amount of expectorated matter, balsamic medicines and iron should be administered.—(*Oesterreichische Zeitschrift für Praktische Heilkunde*, v. 2, 3, 1859.)

II.—*On the Treatment of Pneumonia.* By DR. BRANDES, of Copenhagen.

The author endeavors to prove, by means of statistics, that the purely expectant treatment of pneumonia has by no means given, at all times and places, those favorable results which its advocates boast of. The indiscriminate use of general bleeding is just as injudicious as the exclusive adoption of the expectant plan.

In every epidemic, it is necessary to determine whether blood-letting is applicable or not to each particular case. Venesection is generally to be avoided in cases where the blood is in an anæmic or dissolute condition, as for instance in drunkards. In the General Hospital, at Copenhagen, the acetate of lead is frequently used in such cases. Professor Christensen praises this remedy very highly, and had ample opportunity of testing its value, as cases of pneumonia in debilitated individuals are of common occurrence in the hospital referred to. Professor Christensen believes the acetate of lead to be one of the most efficacious means in the treatment of pneumonia and prescribes it generally in combination with quinine, one grain of each every two hours. If the cough is very violent, opium is added instead of the quinine. Dr. Bramsen has used acetate of lead, especially in the treatment of pneumonia in very young children, and has been very successful with it. Dr. Brandes, who tried the remedy in doses of half a grain in children of one to eight years of age, has obtained results equally favorable, and extols particularly its calming properties in this disease.—(*Virchow's Archiv*, 1859, xv. 3 and 4.)

III.—*On Carbonate of Lead in Phthisis Pulmonalis.* By PROF. BEAU.

Nature occasionally cures cases of pulmonary tuberculosis; why should we not endeavor to find out its secrets? Professor Beau believes that he has discovered a means of curing the disease; it consists in a pathological antagonism, which, according to him, exists in the effects of lead-poisoning. M. Beau has seen painters, potters, and manufacturers of white-lead, very much enfeebled, but has met with but one of this class of workmen who suffered from phthisis, and in this case the exception was apparent, for the patient had never experienced a single symptom of lead-poisoning.

From this view of a special antagonism between tuberculosis and saturnine cachexia, M. Beau derived the idea of producing artificially an impregnation of the same nature, with the object of making it serve a therapeutical purpose.

It is undoubtedly not the first time that the preparations of lead have been prescribed in pulmonary tuberculosis; but when the acetate of lead was ordered, especially by Professor Fouquier, for the profuse perspiration and colliquative diarrhœa of phthisical patients, this salt was given only as an astringent and palliative; here, on the contrary, the saturnine agent is administered as an alterative, and M. Beau prescribes it with the intention to cure.

Five or six patients in his clinic take *Morton's pills*, a euphemism invented in order to conceal the true nature of the medicine. Morton's pills are composed of balsamic substances; those employed by M. Beau contain only carbonate of lead, in the dose of about one grain and a half for each pill. At first but one pill is taken; the next day he gives two, then three, and thus increases the number every day, until manifest signs of saturnine impregnation are produced, such as jaundice, the blue line at the edges of the gums, and insensibility to pain. He stops as soon as the patient complains of pain in the limbs and of great lassitude.

Among the patients subjected to this treatment, we will mention two women; one of them suffered from an obstinate cough, which provoked vomiting, and prevented her from taking nourishment. In this case the phthisis was characterized by dullness, prolonged expiration, rude respiration, and some crackling; from time to time the cough and muco-purulent expectoration were accompanied by hemoptysis, night-sweats, and by fever occurring in the evening. This patient was easily brought under the influence of the medicine; a dose of three pills sufficed to provoke neuralgic pains, and M. Beau had to reduce the number of pills to two. She suffered for some days even after the cessation of the treatment, but *she did not cough any more.* When she left the hospital the expectoration had stopped completely, and there was no more crackling to be heard; the vomiting had ceased, the patient had an appetite, enjoyed her meals, and was in as good a condition as possible. The other patient was a governess, in whom the disease was still more pronounced. This young person had an enormous cavity below the right clavicle; she expectorated considerably, and the disgust which she felt on account of her sputa, deprived her of all appetite. The treatment with pills of carbonate of lead was commenced on the eighth of April. The impregnation of her system was rapidly effected, and after the number of six pills a day had been reached, it was necessary to diminish it on account of arthralgic pains. But the character of the expectoration was perceptibly modified; the sputa, which was so offensive that it excited a repugnance to its passage and actual vomiting, had lost entirely its disagreeable odor, and was very much reduced in quantity.

Further trials with the treatment recommended by M. Beau are being made at the Hospital Saint André, and a report of them is promised, which we expect to place before our readers in due time.—(*Journal de Médecine de Bordeaux*, June, 1859.)

IV.—*On Inflammation of the Thoracic Duct.* By Dr. J. Worms.

The occurrence of this disease has been anatomically proved by Andral, Gendrin, and Velpeau. Dr. Worms has had the opportunity of observing it in a man, forty years of age, in the military hospital of Gros-Caillou. The patient was aroused, in the night of the 15th of December, 1858, by a violent pain, seated deeply in the abdomen, and radiating toward both sides; during the following days, this pain subsided somewhat, but violent fever set in. On the fourth day acute pain in the muscles of the forearm supervened, the member becoming red and swollen; then the thighs and the calf of the legs became equally painful, and the evil increased from day to day.

The patient entered the hospital on the 25th of December; the sclerotica was slightly icteric; the lips, tongue, teeth, and skin were dry; the pulse full, hard, and 80 in the minute; the abdomen tympanitic, but not painful. The left arm could not be moved; the anterior and posterior side of the forearm was the seat of considerable tumefaction, and of intense pain. The superficial veins of the whole limb were much distended, and painful on pressure; they presented the peculiarity that it was impossible to make the blood which they contained progress toward the shoulder; while, on the contrary, less resistance was encountered in making it go toward the back of the hand. This circumstance led to the supposition that an obstacle existed to the venous circulation; in examining the whole venous system carefully, no hardness was found except in the left subclavian, which was hard, and rolled underneath the finger. All the other large veins were much distended, and the patient complained of an almost intolerable pain which exactly followed their track. The patient was treated with sulphate of quinia in combination with camphor, in order to combat the general septic condition, and applications of camphorated alcohol were applied to the tumefied arm.

On the twenty-sixth, an aggravation of all the symptoms had taken place; the emaciation had made rapid progress; the patient's look was unsteady; the sclerotica was much more icteric, and the patient was in a state of drowsiness, when not aroused by words. The swelling of the arm was much increased.

During the following days the patient became rapidly worse; the icterus became general, and assumed a shade approaching to green; the intellect was troubled; the evacuations became involuntary, and convulsive movements of the muscles of the lower jaw supervened. The patient died on the thirtieth of December.

Autopsy.—All the tissues of the left arm were colored yellow; the aponeurosis was sheathed with an organized fibrinous exudation; all the veins were distended by viscous blood, which was completely discolored, and resembled clear bile. From its passage on the first rib to its junction with the internal jugular, the left subclavian vein was very adherent to the surrounding cellular tissue, and was obliterated by a yellow and hard fibrinous clot.

The whole venous system was distended with uncoagulated blood, and the intestines were much distended by gas. About the cæcum, and in a portion of the ascending colon, deep ulcerations of the isolated follicles existed, without the glands of Peyer being enlarged. The spleen was triple its normal size, and its tissue reduced to a pulpy mass.

The entrance of the thoracic duct into the left subclavian vein was surrounded by an indurated cellular mass; the duct was filled with a large quantity of phlegmonous pus; the receptaculum chyli measured five centimetres in diameter; its walls were colored light yellow, and adhered to the surrounding cellular tissue; the tunics of the whole duct were thickened, and quite opake, the internal coat was softened, deprived of epithelium, and presented small and red ecchymotic spots.

The vertebral column was healthy. Numerous swelled glands surrounded the receptaculum chyli; some of the lymphatics joining it also contained pus. The glands from which these vessels proceeded were white and softened in the part in which the lymphatics originated; the opposite part was hyperæmic and harder. The other viscera, and especially the liver and biliary ducts, presented nothing remarkable.

As there is no reason to assume that the pus was carried into the thoracic duct by one of the branches which unite to form it, the disease consisted evidently in a true lymphangitis of the thoracic duct, and of the receptaculum chyli. The inflammation was propagated to the subclavian vein, and caused there the formation of a clot; this explains the symptoms of stasis of the venous blood in the upper extremity of the left side. In regard to the intense icterus which supervened during the last days, M. Worms looks upon it as a general ecchymosis, produced by the alteration of the blood which was not renewed any more by lymph, and by the stagnation of the circulation caused by a physical obstacle; the icterus had been thus produced without any participation of the liver.—(*Gazette Hebdomadaire*, May 6, 1859.)

V..—*Case of Rupture of the Œsophagus.* By Dr. Joseph Meyer.

This case occurred, under the author's observation, in Professor Schönlein's Clinic at Berlin. G. S., a shoemaker, of robust frame and intemperate habits, had suffered from time to time since childhood—when he had drank some soap-lye—from difficulty in swallowing solid bodies. A painful weight was then felt at the epigastrium, the morsel requiring great effort to propel it entirely. Of late years, since he had been given to drink, the difficulty had occurred oftener, and did so especially while he was under its influence. On the first of February, a piece of sausage became arrested at the usual spot, and the man made a most violent effort to expel it. The morsel did not return, and a small quantity of bright-red blood was discharged. Great anxiety of countenance and intense pain at the epigastrium were manifested. At the end of about an hour after the commencement of the accident the right side of the face began to swell. A surgeon was called in, and believing the morsel still to be detained, tried to dislodge it, first by emetics, and then by the probang. The patient, obtaining no relief, was brought into the Charité on the fourth of February. He was compelled to maintain the erect position in bed, and derived most ease from bending the body forward. The face was slightly cyanotic, a subcutaneous emphysematous swelling occupying its right side, the neck, and the anterior part of the thorax. The sternum was excepted, and percussion along its course gave out a clear resonance, and was met with abnormally slight resistance. Posteriorly, percussion was dull on the right side, and on the left side it could not be performed on account of the emphysema. Good vesicular respiration was heard all over the chest, with the exception of the lower posterior portion, where it was dull. The respiration was 40; the heart's impulse was feeble, and the pulse was small and soft, and 142. The patient complained of very severe forcing pain at the base of the xyphoid process, which stretched backward to the spine. The diagnosis was rupture of the œsophagus, with some pleuritic effusion, and emphysema consequent upon the rupture. Mustard poultices and ice were repeatedly applied, and the latter given internally, with no relief. Next day, the emphysema had much increased, both in amount and extent, reaching to the edges of the ribs and to the elbows of the upper extremities. The dyspnœa, the cyanotic coloring of the face and hands, and the pain were excessive; and the patient died fifty hours after the commencement of his symptoms.

His body was examined, twenty-two hours after death, by Professor Virchow. At about three inches above the cardia, a gaping, ulcerated surface, an inch and a quarter long and three-eighths of an inch broad, was observed on the anterior wall of the œsophagus. The edges were smooth, and in some spots as sharp as if they had been punched. The mucous coat was destroyed to a greater extent than the muscular. The mucous membrane was nowise thickened, even at the edges, and was easily separable from the muscular coat. The submucous connective tissue exhibited its normal appearance, and the muscular substance was found to be entirely healthy. The coats of the œsophagus in the vicinity of the ruptured parts were in nowise softened. The rest of the œsophagus being somewhat dilated, just above the cardia was a narrowed part, without any distinct cicatricial structure, but having the muscular substance in a hypertrophied condition. In front of the aperture in the œsophagus was a large collection of fluid in the posterior mediastinum, separated from the surrounding organs by a brownish, gangrenous tissue, mingled with the remains of food, and nowhere exhibiting the thickened wall of an abscess. The emphysema had extended from the right side of the mediastinum to the rest of the upper portion of the body. Exudations were found on both pleuræ.

A due consideration of the above case must reject the idea that first presents itself, that the aperture and the large collection of fluid beneath it were the results of old diseased processes; for whether an abscess formed in the substance of the œsophagus or behind this, it would certainly have exhibited at some point a wall due to chronic thickening, and, at the time of the rupture, pus would have been discharged by vomiting. There were none of the morbid characters observed here, described by Albers in his case of rupture following simple ulcer of the œsophagus; and the formation of the collection of fluids may, in great part, have arisen from the employment of the emetics and probang. The difficulty of swallowing complained of by the patient prior to this occurrrence, had doubtless arisen from the narrowing of the cardia, and that such difficulty should be greater when he had been drinking, is explained by the paralytic condition of the muscular coat under the influence of the alcohol,—a state analogous to the dysphagia observed in brain affections, and to the accumulation of food found to take place at the lower end of the œsophagus after the division of the par vagum. We have here, then, a case of rupture of the œsophagus induced by excessive efforts at vomiting, without the parietes being the seat of preliminary ulceration, abscess, or gangrene. So rare are such cases, that the author has only been able to find two recorded with sufficient minuteness for identification; one, the often-quoted case of Boerhaave, and the other communicated by Dryden to the Edinb. Med. Commentaries, vol. iii., 1788. There are other cases of œsophageal rupture on record which are obscure both as to their causes and their symptoms, and some of which were probably dependent upon softening. The course and autopsy of some of these are so imperfectly reported that nothing certain can be said about them. Others, again, are rendered obscure by their complication with accompanying brain affection. The two cases above referred to are quoted at length by the author, and compared with his own.—(*Berlin Med. Zeitung*, 1858, Nos. 39, 40, 41.—*Medical Times and Gazette.*)

VI.—*Observations on the Etiology and Diagnosis of Hepatitis.* By DR. BERTULUS, of Marseilles.

Dr. Bertulus, Physician of the Hôtel-Dieu at Marseilles, has had a practical experience of thirty years, which he gathered, for the greater part, in tropical regions; in accordance with it, he advances the following opinion on the etiology of hepatitis:—

The heat of the atmosphere is not the principal cause of the disease, but miasmatic influences, the use of alcoholic liquors, and stimulating food. Also in tropical climates those regions are comparatively free from the disease where marshy exhalations are not developed; while in northern regions, where intermittent fever is prevalent, diseases of the liver are by no means of rare occurrence. The predisposition to the disease is in this case owing to the periodical swelling of the liver, as it is observed not only in intermittent fever, but also in gastro-enteritis, dysentery, and yellow fever. Yet there are regions free from fever, where diseases of the liver are often observed, and where they are characterized by a peculiar tendency to suppuration, as for instance Andalusia. In these places the principal cause of the disease is the abuse of spirituous liquors and spices; at least, we find that almost all the persons suffering there from affections of the liver are drunkards, or people who eat too much and take their food highly seasoned. In Cadiz, for instance, only sailors, soldiers, and laborers were attacked, all of whom are fond of stimulants; in Malta and Gibraltar the disease did not prevail among the frugal Spaniards, Italians, and Frenchmen, but among the Englishmen, who could not abstain from their accustomed fare, even in a southern climate; in Naples we find the greatest number of patients among the Swiss, who resemble Englishmen in this peculiarity. The same observation is true with respect to the Colonies of Bourbon and Pondichery, and to the first French oriental expedition; in Marseilles, the temperate fishermen who are most exposed to heat, do not fall sick, but soldiers and sailors do. Moreover, it is known that women rarely suffer from diseases of the liver. These views are shared by the physicians of the French navy.

These statements are, of course, not intended to deny that hepatitis may be caused by a general dyscrasia.

The course of hepatitis is often very chronic; in one case communicated by the author, the disease lasted as long as fifteen years.

The diagnosis is often very difficult, particularly in chronic cases; there is always ground for suspicion, if indefinite gastric symptoms persist for a long time.

In the treatment, Dr. Bertulus recommends especially the use of alkaline mineral waters, that of Vichy in particular.—(*Gazette des Hôpitaux*, 17 and 20, 1859.

VII.—*Observations on Fatty, Amyloid Degeneration of the Kidneys.* By PROFESSOR TRAUBE.

To the seven cases of fatty, amyloid degeneration of the kidneys, previously published by the author in the *Med. Central Zeitung*, 65, 1858, he adds four other cases, and draws from them conjointly the following conclusions:—

1. Albuminous urine of normal transparency, pale-yellow color, and low specific gravity, with a varied volume, is found in two morbid conditions of the kidneys only, viz.: in shrinking of the organ, which is either the consequence of fatty degeneration or of diffuse, not suppurative nephritis, and in fatty degeneration.

2. If the patient passing such urine exhibits signs of constitutional syphilis, or of a protracted scrofulous disease of the bones, or of chronic tuberculosis of the lungs, the existence of fatty degeneration of the kidneys becomes probable, and so much the more so, if it be ascertained that the disease of the kidneys developed itself subsequently to these diseases.

3. This probability is rendered much greater, if there exists at the same time enlargement of the spleen, or of this organ and the liver, which is neither attributable to intermittent fever nor to an impediment to the venous circulation. Also diarrhœa, without the presence of intestinal ulcers, indicates the presence of the disease.

4. The circumstances mentioned gain importance, if the urine contains not only a large quantity of albumen, but also pus.

5. If there exists at the same time hypertrophy or dilatation of the left ventricle, without valvular disease, we are justified in assuming an extensive degeneration of one or both kidneys.

6. Highly albuminous, heavy, red urine, the color of which depends upon an abnormal quantity of coloring matter, is observed in fatty degeneration of the kidneys, if in the course of the malady an acute febrile disease is developed, or a structural change in the respiratory or circulatory apparatus takes place which is capable of reducing the tension of the aortic system to a considerable degree; perhaps this condition of the urine may also occur when the epithelium becomes extensively implicated in the fatty degeneration, before the strength of the patient is much exhausted.—(*Deutsche Klinik*, i. 7 and 8, 1859; *Schmidt's Jahrbücher*, May, 1859.)

VIII.—*On the Treatment of Prurigo.* By PROF. V. BARENSPRUNG.

Professor Bärensprung does not agree with Mr. Hunt in the high estimate he forms of the utility of arsenic in obstinate prurigo. He has derived just as little service from the use of Fowler's solution as from the internal use of tar, antimonials, or sulphurets; and he feels much more disposed to agree with Rayer that, independently of certain modifications which the condition of the constitution may require in certain cases, external means are those which should be exclusively relied upon. But the choice of topical applications is not a matter of indifference, for they are quite as capable of doing harm as good. The employment of strong stimuli should be avoided, and even the soap frictions recommended by Hebra and others have always done harm in the author's hands, the free alkali they contain giving rise to increased heat and itching, and in sensible skins inducing eczema. Yet more objectionable are strong alkaline washes. Local anæsthetical applications, as chloroform, and other articles, are useless. A temporary relief is almost always obtained by cupping, which diminishes the afflux of blood that takes place during the paroxysms. Cold baths and applications are usually employed for the momentary relief which they afford. The relaxing influence of tepid or bran baths, and the transpiration induced by a vapor bath, calm the state of excitement which spreads from the cutaneous nerves to the entire nervous system. As a no less useful calming application, inunction of the surface with mild fats, or with bacon-fat, may be resorted to.

The above means cannot be regarded as curative agents. As such, we may mention sulphur, tar, and baths of corrosive sublimate. By means of sulphur, mild cases of prurigo may often be cured; yet we must take care and not be deceived with regard to its effects in an affection so liable to natural periods of remission. It may be used in the form of baths or of ointments; and the author refers to the prompt and lasting relief derived by an aged person in an obstinate prurigo, from the use of the *unguent sulphur. anglicum.* From ointments made of the different varieties of tar he has also derived undoubted benefit, preferring *oleum cadinum* (one part to two of fat) as the least disagreeable of remedies. Cases which have resisted the above remedies have yielded to tepid sublimate baths; two or three of these, each containing two drachms of the sublimate, rapidly dissipating a long-standing affection, the mercury seeming to exert only a local influence. The bath should not be taken in a metallic, but a wooden vessel.—(*Annale der Charité Berlin*, viii. 3.—*Medical Times and Gazette*, June, 1859.)

IX.—*Observations on Megrim.* By Prof. Piorry.

In a clinical lecture, published lately in the *Gazette des Hôpitaux*, is contained some interesting remarks by Professor Piorry on the theory and treatment of the nervous affection commonly known as "megrim," and to which the learned nosologist has given the name of "irisalgia."

Persons subject to "megrim," says M. Piorry, know its approach by the appearance of a cloud covering the centre of the field of vision, such as may be produced on the retina of a healthy person by looking at any very brilliant object. The circumference of the cloud is finished off by ten or twelve teeth placed in a zigzag manner, and the whole extent of the central cloud is of a bluish tinge, resembling the electric light or that of the stars. This image has an incessant oscillating motion, which is followed sooner or later by vomiting, and in some cases by a tingling sensation in the median and ulnar nerves, and persons completely blind from amaurosis have, during the attack, observed glimpses of light. This luminous figure or spectre follows the movements of the eye; it is seen more vividly while the lids are closed, and when they are open, objects are seen only round its circumference; thus, on looking at a person's face, the middle portion is not seen. Where do these changes take place? Is it in the retina? That is doubtful, although the optic nerve is the real origin of the phenomena of vision. M. Piorry inclines rather to place the true seat of the affection in the iris, on account of the vomiting which supervenes on it, because surgeons have long remarked that if, in the operation for cataract, the iris be touched, vomiting comes on almost immediately. This is explained by the anastomosis of the third and fifth pair with some filaments of the pneumogastric.

Here is, then, a primary pathological fact attested by a number of intelligent persons who have experienced it themselves, viz., MM. Sabarraque, Foucault, Jules, Pelletan, Subanski, etc. This fact of itself, indisputable as it is, is sufficient, according to M. Piorry, to establish this theory.

Meanwhile, how must this "megrim" be treated? M. Piorry says it may be arrested in the outset by functional stimulants—that is to say, suitable articles of diet; for instance, two ounces and a half of Bordeaux wine, with a sufficient quantity of biscuit. In cases in which the megrim relapsed with great intensity, M. Piorry administered the following draught, from which he has experienced unhoped-for success, and which appears to him to be indicated wherever the nervous system is involved: ℞.—Quinine, gr. xxx; alcohol, or tincture of canella, enough to dissolve it; water, to increase the amount without precipitation; syrups, half an ounce.

The object which M. Piorry has in view in prescribing this draught is to produce in the nervous system sudden vibrations sufficient to neutralize those already existing. In a word, it acts by substitution, and this much is certain, that the quinine draught cures even those cases of neuralgia which do not assume the periodic form.—(*Journal de Médecine et Chirurgie.—Dublin Med. Press*, June, 1859.)

X.—*On the Treatment of Ischias.* By PROF. TROUSSEAU.

After a lengthy discussion on the two forms of ischias, the idiopathic and the symptomatic, which offers, however, nothing new, Professor Trousseau speaks of the treatment. It is the same in both forms, and consists first in the administration of oil of turpentine, a remedy the efficacy of which, in the disease in question, is well known, and which, if it is borne by the patient, offers very favorable results. Professor Trousseau prescribes it in the dose of about two to three drachms in the day, and directs it to be taken in capsules, particularly those of Mesery, which contain a little over fifteen grains, and can be filled by the patient himself. In very violent cases, he combines with it the extract of belladonna.

The second method consists in the application of an issue in the region of the sciatic notch. During the day, Professor Trousseau keeps it open by means of issue peas, while for the night he fills it with pills consisting of Extr. Belladonnæ, Extr. Opii, āā gr. j; Pulv. Guaiaci, gr. iv; and Gummi Tragac. q. s.; these pills are very hard, but dissolve slowly in the issue. He uses them only during the night, in order to avoid their general narcotic effect. After the pain has disappeared, he keeps the issue open for one to two weeks by peas.—(*Clinique Européenne*, 3, 1859.)

XI.—*Small Doses of Ipecacuanha in Obstinate Malarious Intermittent.* By DR. C. SAUREL.

In a case of obstinate intermittent, occurring in a young man, twenty years old, the author, after employing quinine, arsenic, apiol, etc. in vain, prescribed a powder of about four grains and a half of ipecacuanha, to be taken every morning, and cured the patient by this treatment within a week. The medicine produced neither nausea, vomiting, nor any other of its physiological effects.

Dr. F. Roux, of Cette, remarks, in a letter addressed to the editor of the *Revue Thérap. du Midi*, (March,) that the favorable action of ipecacuanha in cases of this kind has been known to homœopaths for a long time.—(*Rev. Thérap. du Midi*, 13, p. 108, February, 1859.)

XII.—*Substitute for Cod-liver Oil.* By Dr. Hobbs.

The oil of the dugong has been lately proposed as a substitute for cod-liver oil, by Australian physicians. Dr. Hobbs, Medical Health Officer of Moreton Bay, Australia, has again called attention to its curative properties; and if this oil should prove as efficacious in the hands of others as he believes it has been in his own, there will be great reason for congratulation. The dugong is very abundant in the Australian waters and in the Indian seas, and might be obtained in large quantities at a moderate cost. It has the advantage of being a pure, sweet, and palatable oil, which may be used in cooking, and is peculiarly digestible. On the other hand, it does not contain iodine. Those who look upon the iodine of cod-liver oil as an active and important agent in the production of its peculiar effects, will probably be disinclined to accept this report in all its details; it strengthens the position of those physicians who believe that cod-liver oil is mainly valuable as supplying, in a digestible form, carbonaceous material, and thus sustaining enfeebled vitality. Dr. Hobbs prescribes dugong oil in those cases in which cod-liver oil is usually prescribed, and his success has been very encouraging. He believes that it is particularly well suited to the form of disease known as "dyspeptic phthisis." The statements of Dr. Hobbs are well worthy the attention of the profession; and if it be found that the dugong oil can be substituted advantageously for cod-liver oil, the gain will be great to the patient, who will thus be enabled to procure an agreeable and palatable oil at a much less cost than that of the more nauseous and unpleasant medicament now in such high esteem.—(*London Lancet*, June, 1859.)

XIII.—*On the Poisonous Properties of Oil of Elemi.* By Dr. E. Mannkopf.

The experiments of Mitscherlich, (Pr. Ver. Ztg., 45, 1843, and 19 and 20, 1848,) J. Simon, (De ol. æth. junip. vi, Diss. inaug. Berol., 1844,) and Goedecke, (De ol. æth. Cubeb. exper. nonnull., Diss. inaug. Berol., 1850,) with some of the group of ethereal oils, containing 5 C. and 8 H., induced the author to investigate the properties of the ethereal oil of elemi, which shows a similar composition. The results of his experiments are the following:—

The resin of elemi contains about six per cent. of an ethereal oil, which is transparent, nearly colorless, of not an unpleasant smell, and of a somewhat acrid, bitter taste. Sp. gr. 0·852, boiling point between 166 and 174° C.; it burns with a shooting, bright flame, is insoluble in water, easily dissolved in alcohol and ether, is colored red by SO_3, detonates with fuming nitric acid in the cold, leaving a resinous, tenacious mass of not unpleasant smell. The same takes place with the nitric acid of the pharmacopœia on heating. Its formula, according to Stenhouse and Deville, is $C_5 H_8$.

The experiments were made on rabbits and frogs. In the rabbits the oil was injected into the stomach through an elastic catheter; in the frogs it was introduced partly in the same way, partly it was injected underneath the skin of the back, partly applied locally to different parts. The author draws the following conclusions from his experiments:—

Introduced into the intestinal canal, the oil produces in the stomach hemorrhagic erosions and various functional disorders; in the intestines, increased peristaltic motion and pain, which are followed by paralysis and anæsthesia. In a similar manner the oil acts on any part when directly applied. After being absorbed, it paralyzes the nerves of sensation and the par vagum. It produces, accordingly—1. An increase in the rapidity and force of the movements of the heart; from this results an increased diuresis, which is accompanied by inflammation of the kidney, and, perhaps, also of the bladder, this inflammation being caused by specific irritation, and assuming different degrees of intensity; the augmented diuresis causes also an increase of thirst. 2. A restraint and gradual cessation of respiration, which produces atelectasis, with œdema of the lungs, and a decrease of temperature, an additional cause of which, however, is defective nutrition. The second point, in connection with the paralysis of the heart, which finally sets in, causes death; may be that cessation of the cerebral functions assists in bringing about this result.

With reference to therapeutics, the oil may become useful by increasing the contraction of the heart, by augmenting the diuresis, and by producing anæsthesia of the nerves of sensation. The author believes that the oil is not likely to be called into use on account of the first of these properties, as in most cases milder excitants would be preferable. With regard to the second property, the oil of elemi might be usefully employed in all cases in which oil of turpentine is indicated, its pleasant taste making it preferable to the latter. Also, on account of the third property, it could be made a useful substitute for oil of turpentine, for instance, in cases of neuralgia. Whether the therapeutic application of the oil of elemi is attended with any danger, on account of the inflammation of the kidneys, which may possibly arise, must be ascertained by experiments on the living subject.—(*Virchow's Archiv*, 15, p. 192, 1859.)

XIV.—*Selenite a Substitute for Quinine.* By MR. S. CLARK.

Mr. Clark, Civil Assist. Surg. Bengal Medical Service, recommends, in a letter to the editor of the *Medical Times and Gazette*, selenite as a substitute for quinine. In the month of September, 1858, while investigating the use of some preparations of arsenic, much in vogue among the natives in India as remedies in fever, he found that the one most valued as a febrifuge, a fine impalpable white powder, under the name of hurtal, (the common native name of arsenic,) was not arsenic, but some other substance insoluble in any of the strongest acids at his disposal. He, however, commenced its use as a febrifuge, in small doses at first, and the results have been so satisfactory that he considered it his duty to bring so cheap and useful a remedy to the notice of the profession.

On further inquiry, he found the substance was the product of a mineral in a calcined form, procurable in most bazaars; and subsequently pronounced by Dr. Macnamara, Chemical Examiner to the Government, to be selenite.

The natives calcine the mineral in combination with the fresh pulp of the India aloe. About equal parts of each are put into two small earthen pots luted together, and placed on a slow fire. This rough crucible is allowed to cool gradually as the fire burns down, the whole process taking about twelve hours.

Mr. Clark prescribes the medicine in five to ten-grain doses for adults, and one to three grains for children, every four hours, in intermittent fever, and in other cases requiring tonics, and finds it an excellent substitute for quinine, both alone and in combination with other medicines. He has been in the habit of using it almost daily for some eight months.—(*Med. Times and Gazette*, June 11, 1859.)

XV.—*The Acid Nitrate of Silver.* By M. Crocq.

M. Crocq lately read a paper before the Medical Society of Brussels, wherein he sets forth the advantages of a caustic solution hitherto not much employed, namely, the acid nitrate of silver. The author states that it should be used when the surface acted upon is to be more or less deeply modified, without an intention of destroying much thickness of tissue, in fact, in those cases where the solid nitrate of silver or the acid nitrate of mercury are generally used. The acid nitrate of silver is, however, superior to the simple nitrate, as it penetrates much better into interstices, and as its action may at will be made superficial or deep, (the difference depending on the longer or shorter contact.) It is also preferable to the acid nitrate of mercury, because it produces no tonic effects, and never gives rise to alarming symptoms, however extensive the surface may be with which it is brought in contact. Nor can it excite salivation. Its action can, moreover, be at once stopped when the vagina, the mouth, or the eye, are operated upon, as an injection of a solution of common salt will immediately render it inert. Chancres, simple or sloughing ulcers, hospital gangrene, lupus, epithelial cancer, etc. can be treated with this caustic solution. It may be prepared either from the simple nitrate or from metallic silver. To obtain it from the lunar salt, it will be sufficient to add eight times by weight of nitric acid, at thirty-three degrees, to the nitrate of silver, and expose to heat in a stopped bottle. With metallic silver, ten times the weight of nitric acid, at thirty-five degrees, should be poured on the metal, and a gentle heat be used.—(*Bull. de Thér.*, 46, p. 140, February, 1859.)

PHYSIOLOGY.

BY S. WEIR MITCHELL, M.D.,
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I.—*Digestion of Albuminous Matters by the Pancreas.* By Lucien Corvisart.

Most of our readers will remember our recent notice of the paper of M. Corvisart. His essay has attracted much attention and some hostile criticisms. The following remarks by him upon his reviewers and experimental or other critics, explain some parts of his essay which were not altogether clear.

As regards certain experiments by Kefestein and Halwach, from which these gentlemen obtained results which they looked upon as adverse to the views of M. Corvisart, he speaks thus :—

The work presented by these gentlemen to the Academy of Sciences at Göttingen terminates with this conclusion: We entirely dissent from the views of M. Corvisart. The pancreatic juice is incapable of dissolving albumen. Now to the dictum of these gentlemen it would have been easy to oppose the results of my numerous experiments, which have been subjected to the strictest verification. Nevertheless, I determined upon offering to the Academy my attacked essay, and solicited them to accept for my reply an account of one experiment only, the details of which are as follows :—

The subject of the experiment was a young dog weighing about "twenty-four pounds," and previously deprived for the space of fifteen hours of both solid and liquid food: 34 grammes of hardened white of eggs, boiled in water for fifteen minutes, separated from the shells and yolk and roughly crumbled in a cloth, were put into the duodenum, and ligatures placed around its first and third portions. For the purpose of bringing about digestion simultaneously in the stomach, 20 grammes of the same albumen were placed in that viscus, all egress to the surface being prevented by the ligature at the first portion of the duodenum, and by another ligature placed around the clavical termination of the æsophagus. During the operation the pancreas was not disturbed in the slightest degree; indeed it was not even seen. Tubes were employed for the purpose of introducing the albumen at the same instant into the stomach and intestine, and all these operative precautions to which reference is made at page nine of my essay, and which seemed to me indispensable to the success of the operation, were most scrupulously observed. Fifteen hours afterwards, the dog was killed by strangulation. The duodenum presented a swollen, red, and turgid appearance; taken out of the abdominal cavity, and emptied of its contents, we found 150 grammes of a viscous liquid, of neutral, or at most of a feebly-alkaline reaction, and altogether destitute of putrefactive odor. The intestine displayed no traces of the coagulated albumen placed within it in the first instance, if we except five or six soft and attenuated fragments, recognizable, it is true, but not amounting in weight to so much even as 4 grammes.

(*a*) It follows, therefore, that the mixed fluid in the duodenum is capable of digesting albumen.

The stomach in the above experiment was found to contain 250 grammes of an acid liquid. The hard albumen had in like manner disappeared by solution.

The pancreas of the same dog, examined when the digestive process was at its acme, both in the stomach and in the duodenum, presented the following features: The color was of a faint pink. It showed no signs of tearing or of ecchymosis. It was removed, cut up into small pieces, and placed in 200 grammes of water, maintained for twenty-four hours in a closed glass vessel at a temperature varying from 7° to 12° Cent.; the product was then filtered, and I collected 180 grammes of a reddish, viscous fluid, which displayed neither a marked acidity, nor alkalinity to test-paper of extreme sensibility. This pancreatic infusion was tried upon ovalbumen, cooked as in the preceding experiment, and pounded. After remaining four hours only in the stove at a temperature of 40° Cent., the number of grammes of albumen which had disappeared amounting to 45 of the albumen employed in the first instance.

(*b*) Hence it follows that a simple infusion of pancreas can by a power of its own, and without any assistance from intestinal secretions, or bile, etc., digest a large quantity of coagulated albumen.

By the action of a few grammes of the infusion, I was enabled to assign to it a digestive power over fresh, uncooked fibrin, which, calculated proportionately for an infusion of the whole of a pancreas, would suffice for the digestion of 60 grammes of fibrin. Both the digestions, by means of pancreatic infusions and the vivisection itself, were performed in the presence of gentlemen at that time in Paris, viz. Dr. Kuhne, pupil of Messieurs Wohler and Wagner, and Dr. Snellen, of Utrecht, pupil of M. Donders. (Extract from my letter to the Acad. des Sciences de Göttingen; see Gött. Nachr., No. 6, March, 1859, and Zeitschrift für Rationellen Med. of Henlo and Pfeuffer, 1859.) It will be remarked that these several quantities—45 grains of albumen, 60 of fibrin—amount as nearly as possible to within a few grammes of the quantities I had specified in my essay two years before. Messrs. Kefestein and Halwachs have nevertheless affirmed that their experiments were more exact than any others that had been performed. But the exactness of their proceedings began only at that stage when the stove came into requisition; while in fact it was of the highest importance that such exactness should begin in the very abdomen of the animal whose function they sought to determine. These gentlemen were not sufficiently careful in guarding against fallacy. Firstly, inasmuch as they employed the pancreatic juice of an animal unfortunately laboring for eight days under a fistula; secondly, as they made infusions of the pancreas without being mindful of selecting the gland at a fixed and suitable period of the digestive process.

First. I had forewarned experimentalists in my paper that the results obtained by means of the tubes appended to the excretory canal—that is to say, the pancreatic fistulæ—would be so various that it would be impossible to arrive at any definite conclusions by means of them. Messrs. Kefestein and Halwachs continued to employ this mode of procedure in carrying out their first series of experiments. The result has been that they have secured none but negative results. They moreover placed themselves in conditions most unfavorable to success by an ill-judged excess of experimental zeal, by which they assigned the preference both in the collecting the juice and in the carrying out the experiment to that secretion of the pancreas poured out subsequently to an irritation lasting eight days without intermission, and conveyed by the tube, over that secretion formed immediately after the performance of the operation.

It is self-evident that the pancreatic juice collected almost at the moment of the operation alone approximates to the normal secretion, the first quantity which drains away being "that which was already secreted in its physiological integrity in the gland prior to the operation." The longer the interval permitted to elapse, the further does the secretion depart from the true physiological type. Every organ, in fact, possesses its own special sensibility. The eye cannot, like the mouth, tolerate the presence of a grain of sand. The pancreas in no way habituates itself to the existence of fistulæ, as does the stomach, designed, as is this latter, for the contact of foreign bodies.

On the one hand, pancreatic fistulæ, far from being capable of enduring for years, like those of the stomach, end fatally in a few days, or at most in a few weeks. On the other hand, in the case of a pancreatic fistula, the properties of the pancreatic juice begin to deteriorate considerably after a lapse of two, or at most of three days. This is owing either to a diminution in the weight of the solid constituents, or to an alteration in the properties of the secreted ferments without diminution of weight. By the eighth day the deterioration is at its maximum. At this time the pancreatic secretion is in the condition it assumes when it has been made to boil. It has lost all potency over albuminous bodies, although it is still capable of forming an emulsion with fat, and of imparting an alkaline reaction.

The mode of procedure adopted by Messrs. Kefestein and Halwachs with fistulæ will always be productive of negative results.

It is indispensable, when we desire to obtain pancreatic juice as nearly as possible in its normal condition, that that secretion be chosen which was formed in the gland prior to vivisection—that is to say, "that" juice which flows forthwith upon the operation.

"Upon the fulfillment of this condition depends the superiority of the infusion of a pancreas" taken from an animal at the moment of killing it; for if the pancreas be removed within a few seconds after the animal has been killed, the infusion takes hold of the juice normally secreted during life, and which has not yet escaped from the gland.

Secondly. This proceeding has furnished the material for the second series of experiments of Messrs. Kefestein and Halwachs.

But here again they have erred in a most marked degree. It is not sufficient that a secreting organ be taken in order to obtain its secretion forthwith upon the death of the animal. The gland must be secured at that moment when its secreting activity is at its height. This precaution has been neglected by Messrs. Kefestein and Halwachs; and to this omission is to be ascribed the confirmation of the negative results they had obtained. With regard to the experiments detailed in my former paper, I may state that they were performed with infusions of the pancreas taken from animals in whom the duodenum and stomach were full at the moment of killing. M. Meissner has distinctly affirmed that he has obtained active infusions by taking the precaution of securing the pancreas during the period of digestion—this precaution is indispensable. I may add, that if a young and healthy dog be fed with mixed and abundant diet, and that if it be killed toward the fifth or sixth hour after the meal, and the pancreas be then removed, the infusion of the gland will possess the highest* digestive activity.†

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* At such a period of digestion the pancreatic juice is so energetic, that if one omits to arrest the infusion of this gland at the proper time, this latter, if it have been cut up in very small pieces, in part disappears, dissolved and digested by its own proper juice which has escaped from the channels in which normally it is confined during life.

† The infusion made in compliance with these conditions is frequently able to digest 20 or 30 grammes of fibrin in the cold, and in but a few hours, (10° Cent.)

There is in reality a fasting condition of the duodenum, which is not identical with the similar condition of the stomach; in like manner, the fasting condition of the stomach is not identical with that of the mouth. It is highly probable that some little fluid may escape from the pancreas immediately upon the reception of food from the stomach, but the period of greatest glandular activity, of the highest efficiency of the pancreatic juice, is at that moment when the stomach having performed its function, the duodenum begins to act in its turn. This period in the dog is attained toward the fifth or sixth hour. At that time, the stomach still contains some food, and the duodenum contains some already. Before this period is attained, the duodenum is still in its fasting condition, and the pancreas inactive; subsequently to it again, the pancreas becomes exhausted.

Montègre went so far as ostensibly to deny the digestive action of the gastric juice, and even its acidity, for the reason that he was accustomed to examine the secretion during the condition of fasting. The same error has induced Messrs. Kefestein and Halwachs to deny to the pancreatic juice all digestive power over albumen. Their good faith, it is to be observed, is entirely foreign to the question;* whoever imitates them will see, like them, negative results.

Thirdly. Researches of M. Meissner upon the function of the pancreas.

Following upon Messrs. Kefestein and Halwachs, Professor Meissner published in the "Zeitschrift für Rationellen Med." of April, 1859, (having previously read an account of them as early as the autumn of 1856, at the Scientific Congress of Carlsruhe,) the experiments which led him to affirm most positively not only the solution of albuminous bodies by the pancreas, apart from all putrefaction, but the transformation of these bodies into peptone, as I had previously maintained. M. Meissner states: The results at which I have arrived completely confirm those obtained by M. Corvisart, with this restriction, that it is necessary that the pancreatic juice be acid, and not neutral, alkaline, or acid indifferently.

I had in fact stated in the ninth proposition,—"The pancreatic juice possesses the special property of acting efficiently, whether in the alkaline, neutral or acid state."

I beg to refer to pages 8, 29, 32, and 33, of my essay, where is detailed the digestion of albumen brought about either naturally in the duodenum, or by employing the stove with pancreatic juice by itself, and most effectively performed, the reaction being neutral and even alkaline; and I would add, that I was led to assert the existence of this neutrality, not only from my belief in its verification, as far as albumen was concerned, but inasmuch as my experiments on digestion, repeated on fibrin, (pp. 36, 40, 42,) cellular tissue and gelatine, (pp. 67 and 78,) on muscular tissue and on caseine, (pp. 92, 98,) were attended by similar results. Moreover, in these comparative experiments I was not dealing with imponderable quantities, quantities difficult to estimate, but with 20, 30, or 40 grammes of the articles of food, the digestion of which was completed under the influence of an infusion of a dog's pancreas, alkaline, acid, or neutral. The object of M. Meissner led me to investigate anew whether the words "equally well" of my ninth proposition were rigorously correct. I have consulted the records of my experiments. I have taken into consideration the figures indicating the weight of albumen digested by some of the same pancreatic juice, (but varied in such a manner that one solution was neutral, a second alkaline, a third acid.) I noticed differences, it is true, but these amounted at most to a few grammes, and were so slight in themselves, that at this moment it would be impossible for me to say whether, 40 grammes of albumen being experimented upon, four grammes more are digested by the pancreatic secretion being acid or alkaline. This indifference was likewise displayed on placing food in the closed duodenum. At the moment the animal was killed, the reaction was found to be at one time acid, at another neutral, and a third time alkaline; the weight of the material digested under those varying conditions being subject to but little alteration. In conclusion, I would remark that during the experiment, the minutes of which have been drawn up, the attention of Messrs. Kuhne, Snellen, and myself was specially directed to the point in dispute. The minutes run as follows:—

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* I would add, that on preparing for purposes of study an infusion of pancreas, it is necessary to avoid crushing the gland, or agitating it too frequently in the water, or protracting the infusion beyond the period when the liquor becomes clouded. Under all the circumstances, one perceives by this last sign that the juice is beginning to act upon the fatty matters in the gland itself; at a later period it will have begun to act upon the azotized substance, since, like the gastric juice, the pancreatic juice exhausts itself by agitation. Commonly, an infusion which is long in filtering and is cloudy has partly lost its efficiency, unless the operation is carried on at a very low temperature—seven to eight degrees Cent. Rapidity is the rule in the preparation of the infusion.

With regard to the duodenum.—"The duodenum was found to contain 150 grammes of a viscous liquid, neutral or but very faintly alkaline, having no putrefactive smell, and showing no traces of the 34 grammes of the coagulated albumen placed within it in the first instance, with the exception of five or six soft fragments, which, though recognizable, did not amount in weight to as much as 4 grammes." With regard to the pancreatic infusion.—"After remaining four hours in the stove, the quantity of solid albumen which had disappeared amounting to 45 grammes of the albumen originally employed," and further, it is stated that "before the albumen was used, the infusion displayed to litmus or turmeric papers of great delicacy no noticeable traces either of acidity or alkalinity."

The weight attaching to the researches of M. Meissner urges me to solicit most earnestly for further investigations, which doubtless will not fail to be productive of some explanation of the cause of the discrepancy to which this special point has given rise between us.—(*Lancet*, No. 25, vol. i., 1859.)

II.—*On the Mode in which Sonorous Undulations are conducted from the Membrana Tympani to the Labyrinth in the Human Ear.* By JOSEPH TOYNBEE, F.R.S., Aural Surgeon to St. Mary's Hospital.

The opinion usually entertained by physiologists is, that two channels are requisite for the transmission of sonorous undulations to the labyrinth from the membrana tympani, viz.: the air in the tympanic cavity which transmits the undulations to the membrane of the fenestra rotunda and the cochlea, and, secondly, the chain of ossicles which conducts them to the vestibule. This opinion is, however, far from being universally received. Thus one writer contends that "the integrity of one fenestra may suffice for the exercise of hearing;"* another expresses his conviction "that the transmission of sound cannot take place through the ossicula;"† while Sir John Herschel, in speaking of the ossicles, says "they are so far from being essential to hearing, that when the tympanum is destroyed, and the chain in consquence hangs loose, deafness does not follow."‡ The object of this paper is to decide by experiments how far the ossicles are requisite for the performance of the function of hearing. The subject is considered under two heads, viz.: First, whether sonorous undulations from the external meatus can reach the labyrinth without the aid of the ossicles as a medium; second, whether any peculiarity in the conformation of the chain of ossicles precludes the passage of sonorous undulations through it.

1st. Can sonorus undulations reach the labyrinth from the external meatus without the aid of the ossicles as a medium? This question has often been answered in the affirmative, apparently because it has been ascertained that in cases where two bones of the chain have been removed by disease, the hearing power is but slightly diminished. In opposition to this view, it must, however, be remembered that the absence of the stapes is always followed by local deafness, while a fixed condition of this bone (anchylosis) is accompanied by very serious deafness. The following experiments, selected from several others, demonstrating the great facility with which sonorous undulations pass from the air to a solid body, indicate that the stapes, even when isolated from the other bones of the chain, may still be a medium for the transmission of sounds to the fenestra ovalis and the vestibule.

Experiment 1.—Both ears having been closed, a piece of wood, five inches long and half an inch in diameter, was held between the teeth, and a vibrating tuning-fork, C^1, having been brought within the eighth of an inch of its free extremity, its sound was distinctly heard and continued to be heard for between five and six seconds.

Experiment 2.—Three portions of wood, of the same length and thickness as that used in the previous experiment, were glued together so as to form a triangle, somewhat of the shape of the stapes; the base of this triangle being placed against the outer surface of the tragus, the tuning-fork, C^1, vibrating within a quarter of an inch from its apex, was heard for twelve seconds.

2d. Is there any peculiarity in the construction of the chain of ossicles to prevent the passage of sonorous undulations through them? This question has also been answered in the affirmative, on account of the various planes existing in this chain and of the joints between the several bones composing it.§ The following experiments, selected from a variety detailed in the paper, indicate that neither the variety of the planes existing in the chain, nor the presence of joints, prevents the passage of sonorous undulations through it.

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* Mr. Wharton Jones's Encyclopedia of Surgery, "Diseases of the Ear," p. 23.

† Mr. Brooke, Lancet, 1843, p. 380.

‡ Encyclopedia Metropolitana, article "Sound," p. 810.

§ Mr. Brooke, loc. cit.

Experiment 1.—Two pieces of wood, each five inches long, were glued together so as to represent the planes of the malleus and incus, a triangular piece similar to that used in the last experiment being glued to one surface of the interior extremity of the portion representing the incus so as to imitate the plane of the stapes. Three pieces of wood, each five inches long, were also glued together, end to end, so as to form a straight rod. The vibrating tuning-fork, C^1, being placed at one extremity of the apparatus representing the chain of bones, and the other end being placed between the teeth, the sound was heard most distinctly for several seconds; and when it ceased to be heard, the straight rod was substituted, and the sound was again heard, but only for three seconds.

Experiment 2.—Between each of the three pieces of wood representing the chain of ossicles, similar to those used in the previous experiments, were placed instead of glue two layers of India-rubber, about as thick as ordinary writing paper; the pieces of wood being held together, the tuning-fork placed at one end of the chain was heard as distinctly and as long as in the previous experiment. The experiments, dissections, and observations recorded in the paper induce the author to arrive at the following conclusions:—

1st. That the commonly received opinion, that sonorous undulations pass to the vestibule, through the chain of ossicles, is correct.

2d. That the stapes, even when disconnected from the incus, can still conduct sonorous undulations to the vestibule from the air. So far as our present experience extends, it appears that in the human ear sound cannot reach the labyrinth from the membrana tympani without the agency of two media, viz., the air in the tympanic cavity, and the chain of ossicles.—(*Lancet*, No. 25, vol. i., 1859.)

III.—*On the Identity of the Meconium and Vernix Caseosa.* By PROFESSOR FORSTER.

The general opinion respecting the meconium is, that it consists in a mixture of bile, intestinal mucus, and intestinal epithelium; but microscopical examination shows that, besides the coloring matter of the bile, it is composed chiefly of the vernix caseosa. For the most part it consists of small, flat scales, which present all the characteristics of horny epithelial plates, completely corresponding to the horny scales of the vernix. Under the microscope, the meconium only differs from the vernix by the presence of the yellow coloring matter and the smaller number of fat globules. A proof of the identity, is its containing minute hairs, in just the same numbers as the vernix, which, indeed, without the microscope, may be separated from it by a needle. The horny scales could have no other source than the vernix, for the stomach and intestinal canal are lined with cylinder epithelium, and the mucous membrane of the mouth and œsophagus does not give rise to them. Besides these scales, we observe in the meconium fatty globules of different sizes, crystals of cholesterine, and irregular yellow and brownish clodlets, which give the dark color to the meconium, and are doubtless biliary coloring matter. The fatty globules are evidently of cutaneous sebaceous matter, and the cholesterine is in part derived from the bile, and in part from the decomposition of the vernix, during its passage to and deposit in the rectum. The fœtus swallows, from time to time, some of the liquor amnii, having the vernix swimming in it, and the hairs and horny scales pass unchanged along the intestinal tract. Whether any of the sebaceous matter is taken up by the lacteals, may, perhaps, be determined by microscopical examination of the intestinal villi of the fœtus; and it would be interesting to determine, by numerous examinations of the intestinal canal, at what period this swallowing of the liquor amnii commences. As the elements of the vernix are only suspended in the liquor in small quantities, a large quantity of this must be gradually swallowed to lead to the amount of meconium usually present. The water must be soon absorbed from the stomach, as it is never found in it. The greater portion is probably excreted by the kidneys, and again reaches the amnios. That it in nowise contributes material to the nourishment of the fœtus has been shown by Bischoff; but that does not prevent it serving some purpose in the economy. A regular examination of the entire contents of the intestinal canal, in numerous fœtuses of different ages, is required to elucidate these points; and especially would such examination be of interest in the case of monsters. That the acephalæ have no meconium has long been known, and has usually been attributed to the absence of the liver. This would, however, only explain the absence of its dark color; and the meconium will only be wanting when, by reason of the malformation of the intestinal canal, the reception and transport of the liquor amnii holding the vernix caseosa are prevented.—(*Wien Wochenschrift*, 1858, No. 32; from *Medical Times and Gazette*, No. 467.)

IV.—*Physiology of the Thymus Gland in a state of Health and of Disease.*

By Alex. Friedleben, Frankfort, 1858, p. 366.

This is the title of an elaborate work on the thymus gland, founded upon a vast number of original observations. The most important conclusions are as follows:—

The thymus is a ductless gland, an aggregation of follicles, but moderately supplied with blood. Its nerves are chiefly those which belong to its vessels. It secretes a clear intercellular fluid of a serous character and containing numerous rounded nuclei and some cells. The nuclei pass unchanged into the general venous circulation. The follicles of the thymus are constantly being built up and destroyed.

The thymus increases in size from the time of its first appearance up to puberty, but after birth this growth is less and less marked, from year to year, while at the same time its secretory activity diminishes. The thymus disappears in adult life, undergoing oleaginous degeneration. This is first observed in the nerves. Then the arteries become narrowed and the veins dilated, so as to retard the circulation, and to produce finally the conversion of the whole organ into fatty matter. The thymus is sometimes absent in children otherwise healthy and well nourished.

The chemical elements of the thymus are water, albumen, gluten, sugar, lactic acid, pigment, fat, saline matter, and perhaps a trace of hypoxanthine. Of these, albumen, sugar, and salts, predominate in early life.

A large number of facts, observed by others or created by himself, finally enable the author to conclude that, during growth, the thymus gland aids in nutrition, in the preparation of blood, and in the general formation of tissues. M. Friedleben also furnishes the first analyses of this gland which have yet been made.

V.—*Increase of Muscle during Growth.* By J. BUDGE.

It has long been a matter of some interest to ascertain whether, during growth, and the hypertrophy caused by exercise, the muscular fibres of animal life increase in number or merely in size. M. Budge, in an interesting communication to the French Academy, states that the actual number of the fibres increases with every year during the period of growth, so that the increase of muscular tissue does not depend alone upon enlargement of the individual fibres of the muscles. M. Budge has also ascertained that starvation diminishes the number of the fibres, and notably lessens their size.—(*Journal de Physiologie;* from *Comptes Rendus de l'Académie*, October, 1858.)

Bi-Monthly Periscope.

SURGERY.

1. ON CALCULOUS DISEASES IN HUNGARY. By *Professor Balassa.*—This article is the substance of a reply made by Professor Balassa, of Pesth, to a circular asking for statistical information, issued by Professor Gross, of Philadelphia, U. S. Owing to the absence of rural hospitals in Hungary, Professor Balassa observes, almost all the cases of stone which occur in Hungary are brought to Pesth for treatment; and in his clinic at the hospital, he has treated, in the twelve years, 1843–55, 135 cases. The ages of these patients were as follows:—

From 1 to 7 years	21
" 8 " 15 "	32
" 16 " 25 "	47
" 26 " 50 "	27
" 51 " 60 "	6
" 61 " 70 "	2
	135

The employments and conditions of these patients were as follows:—Peasants, 82; artisans, 39; tradespeople, 7; *employees*, 2; landowners, 2; students, 2; teacher, 1.

Thus calculous affections are met with in the Pesth clinic with by far the greatest frequency in the young, inasmuch as out of a total of 135 cases, 100 of the patients had not reached their twenty-sixth year; and when it is added that in most of the cases the disease had long existed, its origin must be referred to a still earlier age. Moreover, during the twelve years, there were also forty-nine children treated for stone, in the Pesth Children's Hospital. So, too, the immense proportionate prevalence of the disease in the peasant (60·74 per cent.) and in the artisan (28·889 per cent.) classes is to be remarked. These classes, indeed, almost exclusively furnish the examples of the disease occurring among the young, as the author's private practice has taught him. Dr. Ivanchich, too, in his statistics of 100 cases of stone, comprises 33 natives of Hungary, but only 2 of these are as young as eighteen. The conclusion is, then, that stone prevails especially among the young of the poorer classes; and this leads us to consider some of the influences that are at work in its production. The nature of the diet and mode of life can alone explain these differences. It is the custom in Hungary to feed children when weaned, or even while suckling, upon the same articles of diet as are employed by adults, and while these in the wealthy classes may be nutritious and digestible, among the poor they consist of unwholesome matters, as fruits, vegetables, pork, and bacon. The latter, then, are fed with a diet that is difficult of digestion, and containing by far too large a proportion of the carbonaceous element; and the importance of this statement will be seen when the chemical constitution of the calculi has been considered.

For various reasons, the author has only been able to preserve 83 calculi in his cabinet, but all these have been carefully examined, and he furnishes the details of the results: 63 of the calculi were of homogeneous composition, and in 20 the nuclei and external portions were of different composition. The general result is, that while uric acid was the most frequent constituent, it was not the most frequent chief constituent, for while it was found more or less in 72 calculi, it constituted the chief portion of these only in 23. The oxalate of lime was the chief constituent; for it formed the chief mass of 20 calculi of homogeneous composition, and formed the nuclei in 12 out of the 20 stones of non-homogeneous composition. It is evident, then, that the formation of stone in Hungary is much due to the richness of the urine in oxalates, *i.e.* in the carbonaceous combinations furnished by the defective aliment employed. Of the 20 stones having nuclei of different composition to the surrounding parts, in 12 these consisted of oxalates and in 8 of urates. It is owing to the prevalence of these in the urine that the first impulse to the formation of calculi is given, while their enlargement much depends upon the presence of phosphates. These were present either as a chief or partial constituent in 45 calculi. These considerations lead to the conclusion that the most effectual means of preventing the formation or recurrence of calculi would be to act upon the oxalic or uric acid formations of the urine.

Of the 135 cases, 13, on account of disease of the urinary organs or the condition of the entire economy, were deemed unsuitable for operation. Some of the 122 operations were performed under very unfavorable circumstances, in consequence of the presence of chronic disease of the urinary organs.

Of the 122 cases operated upon, 92 were submitted to lithotomy, and 30 to lithotrity. Of the former, 11 patients, (11·95 per cent.,) and of the latter 5 (11·66 per cent.) died. Among the 11 fatal lithotomy cases, there were 5 individuals who suffered from severe chronic disease of the kidney, and one who died of typhus during an epidemic. There were, therefore, only 5 cases in which death took place in from the second to the fifth day, from inflammation of the bladder or peritoneum, consequent upon the operation. This reduces the strict mortality from the operation to 5·43 per cent. Among the 5 fatal lithotrity cases, in 1 death was due to phthisis, in 2 to old suppurative nephritis, and in 1 to recent nephritis, this last and one other death being alone directly referable to the operation, *i.e.* 6·66 per cent. Rectal fistula and urinary infiltration were never met with in any of the lithotomy cases. The difficulty in extracting the stone was considerable in many cases on account of its size, and in several of these inflammation of the bladder and peritoneum was set up, this proving fatal in 5 instances. Irritation and inflammation of the bladder frequently also followed lithotrity, leading to considerable delay in the repetition of the operation. With the exception of 7 cases, the stone was always removed entire. The largest calculus measured two inches five lines in diameter, in 5 calculi the diameter was above two inches, and in 24 between one and one and a half inch. The heaviest, removed from a boy ten years old, weighed one ounce and a half and ten grains, and the lightest seventeen grains. In 8 patients there were two stones, and in one three. In 2 children union by the first intention took place, and they left between the eighth and tenth day. The other patients were discharged between the twenty-first and sixtieth days. Relapse occurred in 2 instances after lithotrity, and in 1 after lithotomy.

Of the whole 135 cases only 1 occurred in a female, upon whom lithotrity was performed.

As to the mode of performing lithotomy, Professor Balassa makes an aperture in the bladder with a convex scalpel sufficiently large to admit the index finger of the left hand, and then enlarges it by means of a straight probe-pointed bistoury or Heister's knife. He lays great stress upon the wound being made sufficiently large, and in cases of voluminous calculi frequently makes a bilateral incision. After bleeding has been arrested by the injection of iced water, (performed while the fingers maintain the wound of the bladder open,) some small strips of oiled linen are carried along the index finger to the wound in the bladder, (especially when extraction has been difficult,) in order to prevent the urine penetrating the swollen edges of the track of the incision. They are removed after two or three days, and the author attributes the non-occurrence of infiltration principally to their employment. — *Wien Medizin. Wochenschr.*, 1858, Nos. 25 and 26.—*British and Foreign Medico-Chirurgical Review*, July, 1859.)

2. ON COLORING THE LIPS BY TATTOOING AFTER CHEILOPLASTY. By *Professor Schuh.*—Two years since Professor Schuh performed cheiloplasty in the Vienna Clinic, upon a girl in whom one-half of the nose, together with the vomer and the whole of both lips, were wanting. The flaps for the lower lip were supplied from the region of the lower jaw and the neck, and that for the nose from the

forehead, while the skin of the arm was employed for the upper lip. The connection of the flap with the arm was divided on the tenth day, and all went on well, excepting that the new upper lip, at its lower edge, owing to the cicatricial process, was covered with corion. The red-lip color was wanting to give the mouth an agreeable appearance; and Professor Schuh determined to endeavor to imitate this by tattooing. He first of all tried cochineal as a coloring material, but this produced a too pale red, and he then had recourse to cinnabar, which gave rise to a surprisingly natural color.

The following is the procedure: the cinnabar is made into a thin paste with water, and the limits within which the pigment is to be applied are traced with a pen and ink, in imitation of the direction of the natural redness of the lips. For forcing the pigment into the organic substance, a bundle of sharp-pointed pins is employed, each pin being wound round with waxed silk from its head to within four lines of its point. Ten or twenty such pins are tied into a bundle with thread, dipped into the coloring substance, and repeatedly forced two or three lines deep into the lip. The margin marked by the ink is first to be colored, and then the other portion, dipping the points into the pigment again as this is wiped off. Only a slight bleeding ensues, and the pain is very little, in consequence of the diminished sensibility of transplanted parts. Any of the pigment remaining on the surface should be left there until next day, and if any part is found to be less red than the others this can be easily remedied.

How long this redness will remain unchanged must be determined by further experience. In Professor Schuh's case it had become nowise paler at the end of a year and a half; and he believes that the introduction of the process of tattooing into the field of plastic surgery is not to be despised.—(*Wien Medizin. Wochensch.*, 1858, No. 47.—*British and Foreign Medico-Chirurgical Review*, July, 1859.)

3. DIFFERENT MODES OF PERFORMING LITHOTOMY IN THE ENGLISH HOSPITALS. A large majority of English surgeons employ the ordinary lateral method of lithotomy on a curved staff. There has been, however, a considerable disposition to endeavor to improve it of late years. The median plan, so strongly recommended by Mr. Allarton, has been tried by not a few London surgeons, and among provincial ones has found a warm advocate in Mr. Teale, of Leeds. At the London Hospital it was first adopted by Mr. Ward, about two years ago, and since then has been employed by his colleagues, Mr. Critchett and Mr. Gowlland, each in a single instance. All the three patients were children, all recovered well, and in all it was considered that much less than the usual amount of bleeding took place. At Guy's Hospital, Mr. Cock has performed median lithotomy several times, and Mr. Erichsen has done the same at University College hospital, both surgeons being, we believe, well satisfied with its results. On all hands it is considered to be best adapted for children and for small stones. At St. Bartholomew's, Mr. Lloyd still continues to operate in all cases by his recto-urethral (median) method, which we described in detail when he first adopted it in 1853. He informs us that he has not yet lost a case after it, and considers it decidedly preferable to the lateral operation. His colleagues, however, without exception, we believe, always employ the latter. At the Metro-

politan Free, Mr. Hutchinson always employs his rectangular catheter-staff, and considers that he obtains great advantage from it. The same instrument has been employed at King's College by Mr. Lee, but it is not, as far as we observe, in use at any other hospitals. In a recent instance in which the calculus was of large size, Mr. Hutchinson injected the bladder with oil, instead of water, in the hope of facilitating the dilatation of the parts.

With regard to the median operation as advised by Mr. Allarton, it is universally admitted to be adapted only for small calculi. Now Mr. Lloyd's experience during the last few years has quite proved that when the anterior commission of the sphincter ani is cut clean through from the perineal wound, there is no danger of the parts not healing. Might it not be well, therefore, to adopt this measure, whenever, after the usual median incisions, the stone has been reached and is found too large for removal? Mr. Lloyd's operation gives abundance of room.—(*Medical Times and Gazette*, July 9, 1859.)

4. ON GONORRHŒAL RHEUMATISM. By *M. Rollet.*—Notwithstanding what has been written on the subject, this affection is not universally admitted; and Professor Thiry, of Brussels, has recently formally denied its existence—there being, in his opinion, no rheumatism that can be legitimately called gonorrhœal, but only instances of arthritis coinciding with gonorrhœa, without any relation of cause and effect. M. Rollet, of Lyons, has, however, just published a memoir, in which he maintains the reality and peculiarity of this form of rheumatism. First, the frequency with which gonorrhœal subjects become affected with rheumatism is greater than it would be if it were a mere coincidence; and next, there is the repetition of the rheumatism so often met with in a given individual on the occurrence of a new, or the revival of an old gonorrhœa. While, too, it resembles ordinary rheumatism, it differs from it markedly not only in its cause, but in the fact of its rarely affecting the muscles, nerves, or viscera, and, above all, the heart. Another remarkable difference consists in its usually being mono-articular, or at least extending to but very few joints—the knee-joint being that which is much the most frequently attacked, and then the ankle, the other joints suffering much seldomer. Then, again, this form of rheumatism is often accompanied by an iritis, the seat of which is preferentially the anterior layer of the iris, and sometimes the serous membrane lining the posterior surface of the cornea, *i.e.* Desmours' membrane, either wholly or in part.

In the absence of pathological examination, it is difficult to say in what the lesions of gonorrhœal rheumatism differ from those of ordinary rheumatism; but there can be little doubt that they are not identical. At all events, it is certain that the inflammation becomes much more specially and more strongly fixed in the synovial membrane in this form of rheumatism than in the other, and hence the marked tendency to hydrarthritis which has struck all observers; and when it does not affect the joints, it exhibits a preference for the serous membranes, the sheaths of tendons, accidental brusæ, and Desmours' membrane. Clinically, gonorrœhal rheumatism is distinguished by the less acuteness of the inflammatory symptoms, whether general or local, and by a less tendency to suppuration; but, on the other hand, there is a greater tendency to anchylosis, especially in the small joints, and in predisposed subjects, to white-swelling. The disease, again, is excessively rare in women, if it is observed in them at all.

Gonorrhœal rheumatism seems to depend upon its special causes; for the predisposing and determining causes of common rheumatism have seemed to be without influence in the great majority of cases. The abundance of the discharge appears to be the most general condition upon which its production depends. Prior to the rheumatism, the discharge has usually been acute, and sometimes very acute; or having become chronic, has revived again. The duration of the discharge does not seem to exert the same influence. When the rheumatism has become developed, it exerts a repulsive effect upon the discharge, thus usually sensibly diminishing, although in a third of the cases it remains stationary. M. Rollet has seen it become more abundant only twice, and suppressed but once. The doctrine of metastasis has no foundation; and in treating the disease we must not seek to reproduce the discharge, as this doctrine would indicate; but, on the contrary, endeavor to arrest it as rapidly as possible, inasmuch as owing to the dependence of the rheumatism upon the urethritis the slightest exacerbation of the latter might be attended with aggravation of the synovitis. Therefore, copaiba and cubebs, together with injections or cauterization of the canal, should be resorted to. For the rheumatism itself, bloodletting is useful, local bleeding being, in the majority of cases, preferable. When the acute inflammation has been subdued, or if this never existed, and when articular effusion is the predominant feature, the flying blister is a most effectual means. Emetics and purgatives are valuable remedies, as are also vapor baths, especially toward the end of the malady.—(*Bulletin de Thérap.*, tome lv. p. 130.—*Medical Times and Gazette*, July 9, 1859.)

5. CANCER OF THE TONGUE; REMOVAL BY THE ECRASEUR.—[The écraseur has become almost obsolete in London hospital practice. We have ever looked upon its use as an unsurgical proceeding. Like every other novelty, it has had its trial, and it will soon be altogether laid aside, unless in some very exceptional surgical maladies, in which the risk of hemorrhage may again require its aid.]

On the twenty-first of June, a man of about forty-five years of age, with an epithelial cancer on the left side of the tongue, of four months' growth, had it removed in the Westminster Hospital, by Mr. Brooke, by means of this instrument. The cancerous mass was of the size of a walnut. The centre of its base was pierced with a large needle, and the chain of the écraseur drawn through it. The left half of the tumor was very rapidly divided by the instrument, and then the other half, thus taking away the entire disease in one piece, leaving a healthy surface behind. There was not much bleeding, although one or two small vessels required to be tied. The patient was fully under the influence of chloroform while undergoing the operation, and since its performance he may be said to have been going on very satisfactorily. Mr. Brooke stated that his reason for using the écraseur, in preference to the knife, was, to avoid the hemorrhage, which would not be so great by thus tearing the vessels asunder with this instrument.—(*Lancet*, July 2, 1859.)

6. POPLITEAL ANEURISM TREATED BY FLEXURE OF THE LIMB AND COMPRESSION; RUPTURE OF THE SAC INTO THE KNEE-JOINT; LIGATURE OF THE ARTERY; CURE.

(Under the care of *C. H. Moore, Esq.*)—The following case appears to us of very great interest in many points of view. It illustrates the great difficulty of successfully applying the treatment by compression when the patient is very muscular, and the tumor of large size and growing rapidly, and it is a forcible example of one of the most formidable dangers of certain forms of aneurism in the ham, viz., ulceration of the ligament separating the sac from the cavity of the knee-joint, and the effusion of the contents of the sac into that cavity. This accident is most liable to occur when the opening in the artery is situated on its anterior side, and that this was the case in this instance was rendered probable, in Mr. Moore's opinion, not merely by the subsequent rupture into the joint, but also by the thrilling character of the pulsation previously. We have ourselves observed similar cases, in which the wave of fluid in the vessel appeared to be communicated to the hand distinct and superficial to the more general heaving of the aneurismal tumor, and have noticed in such cases the increased liability of the joint to irritation and to synovial effusion. A slight increase of the same action which leads to this effusion will produce ulceration in the walls of the aneurism, already sufficiently disposed to it, if there is no great amount of clot, and thus the joint is laid open. It will be noticed that the treatment by flexion of the joint, which was recently brought before the Medico-Chirurgical Society by Mr. Ernest Hart, and which succeeded so perfectly in his case, and in one under the care of Mr. Shaw, which was read at the same meeting, was adopted here, but was not persevered in, as it evidently did no good, and may even, perhaps, by producing some direct pressure forward on the tumor, have tended to increase its liability to implicate the joint. We may conjecture, from the relations of the parts and from the shape which the artery would assume when, on the one hand, stretched over an aneurismal tumor seated behind or superficial to it, and on the other, relaxed behind one situated on its opposite side, that this treatment by simple position will be found adapted mainly, if not exclusively, to the former class of aneurisms, and probably will succeed only in those which are of moderate size and not growing very rapidly.

The perfect success of the ligature in this case, both in curing the aneurism and restoring the knee-joint to its functions, ought always to be kept in mind in the treatment of a similar grave complication. Even although so perfect a success might not occur in a second case, it would certainly be the best practice to give the patient the chance of the ligature of the artery before sacrificing the limb, and to watch for any indication of mischief set up by the clot in the knee-joint. The occurrence of abscess in the joint, as a result of such irritation, would probably limit the efforts of conservative surgery, and amputation would then be practiced as the last resource. Such was the view taken by Mr. Moore of the present very fortunate case—for the notes of which we are indebted to his case-book.

A fine, manly, highly-nourished navigator, aged forty-six, was admitted on January 18th, 1859, under Mr. Moore's care, with a very large aneurism in the right ham. It reached five inches and a half in vertical extent, and had its greatest lateral breadth at the level of the knee-joint; its highest part lay under the vastus internus, in the course of the artery; while below it extended a little way beneath the gastrocnemius. The aneurism expanded visibly, and with great force, in every direction, but more so laterally than backward; and its beat was accompanied by a delicate thrill against the hand laid on the popliteal space, and with a distinct systolic and feeble diastolic *bruit*. There was no swelling of the knee-joint, but the leg and foot were œdematous. The artery in the thigh beat with great force; those in the leg and foot very feebly. The current in the femoral being stopped, the aneurism became soft, and did not appear to contain much clot; it resumed its full size again in about two pulsations.

The history was, that about five or six weeks previously, without any particular injury or strain, his knee and whole leg swelled very greatly, and occasioned him much pain. He was directed to foment the limb; and much of the swelling subsided. Three weeks ago he felt the pulsation. The limb, at the time of admission, was useless; but he did not think that the knee was enlarging.

The knee was flexed, and fastened in that position with webbing passed in a figure of 8 around the foot and thigh; a pad and tight roller being inserted under the webbing, to moderate the flow of blood through the femoral artery. This left the aneurism beating slightly, but not visibly; and the *bruit* still audible in it, although less loud.

Next day the bandage having slipped, and being apparently of little service, was more firmly applied; and a rib-roller was added round the trunk, and passed in a figure of 8 around the foot. The result of all this was, that the aneurism beat comparatively little. The limb did not become materially gorged in the lower part.

January 20th. The aneurism being a very large one, and the webbing having slipped in the night, and rather chafed the foot, Mr. Moore readjusted the sling; but also applied over it a Skey's tourniquet, and instructed the man in the use of it.

On January twenty-first, it is noted that the aneurism had a decidedly less firm pulsation. He used the tourniquet steadily during the day, and the limb became gorged and œdematous below it. The force of the pulsation appeared, however, in the evening, to be increasing again; and the aneurism to be growing upward beneath the vastus internus. The webbing was readjusted, Skey's tourniquet was put above it, and the Italian tourniquet below, with orders to tighten them alternately.

Compression was continued during the next ten days, but the flexion of the limb was given up after a short time, and the foot raised upon a double matrass. Œdema of the limb, however, came on; and yet the powers of the pulsation did not diminish. It is stated that, notwithstanding every care on the part both of the patient and his medical attendants, the tourniquets did not act permanently well.

On January thirty-first, when he was seen, the shape of the knee was at once observed to be altered, the synovial membrane being full, and the patella raised from the condyles. It could be pressed down through some fluid. On loosening the tourniquet, pulsation was found in the joint, but in no other part of the limb except the aneurism; so that it was clear that the aneurism had burst into the joint. When the tourniquet was loosened, the joint became full and tense; and this tension was diminished again when the pulsation was cut off.

A consultation was now held; and it was agreed that the artery should be tied, in the hope that the opening between the sac and the joint might be obliterated, and the blood then absorbed from the joint. It was the more likely that this would occur, since the opening could have been only very recent, as the change in shape had not been noticed by the house-surgeon at his morning visit.

The artery was accordingly tied, at 3 P.M., by Mr. Moore. The wound was made large and very oblique. No difficulty was experienced in finding the artery, which was tied with a strong silk ligature. The knee-joint did not become flaccid after the operation, nor could its contents be squeezed out again.

In the evening, he was found very comfortable. The toes were cold, but not more so than those of the other limb; the calf and heel slightly warmer. A liberal diet was allowed, and the limb was kept for the next eight days encircled in flannel bandage. No sloughing followed the operation. The wound suppurated a little, and the ligature did not come away till February twenty-first. On the removal of the bandage, on February eighth, the knee was found of its natural form, and without blood. The aneurism was then decidedly smaller, circumscribed, and firm. The knee measured, round the top of the patella, seventeen inches and one-eighth, being five-eighths of an inch less than on his admission. On February twenty-first, when the ligature came away, it is noted that the convex rounded part of the tumor was soft, and fluctuated with a readiness almost like that of pus. Under the use, however, of astringent ointments, sal ammoniac, and tannin, the tumor lost this almost fluid softness, and much diminished in size. He was discharged in April.

On May twelfth he returned, able to bend his knee to a right angle, and having walked to the hospital from Hampstead. The ham merely seemed full, and it was necessary to flex the knee before any tumor could be felt. All softness was gone, and the mass felt oval, firm, and less than a hen's egg in size. The whole leg and foot were œdematous, but the knee was not so.—(*British Medical Journal*, June 18, 1859.)

PRACTICE OF MEDICINE.

1. CURSORY REMARKS ON THE DIAGNOSIS OF FATTY HEART. By *Henry Kennedy*, *A.B.*, *M.B.*, Fellow and Censor of the College of Physicians in Ireland, Physician Extraordinary to Sir P. Dun's Hospital. (Read before the Medical Association, June 1, 1859.)—The knowledge of morbid anatomy has increased much within the last twenty-five years; nor must we forget that Dublin has the credit of taking the first step in this great move, by the establishment of the Pathological Society; and a student can now, by very little trouble, attain a knowledge of morbid structure which would have been utterly impossible for even the oldest to acquire a few years since. Of the various paths to which the study of diseased structure has led, none has been more striking than the one known under the name of fatty degeneration; and very few are the parts of the frame in which this change has not been detected. It is not my intention here to speak of this subject generally. One remark, and only one of

a general character, would I make; and this is, that the change known as fatty must be looked on in a different point of view from any other degenerations with which we are familar. Neither malignant, strumous, nor other changes are to be found in the frame which is healthy. But fat is ever, and must ever be, a constituent part of it. Hence, when its presence amounts to disease, it is only an exaggeration of a healthy condition, if I may so speak. Hence, also,—and this is a deduction which it may be of much greater consequence to keep in mind,—the powers of art may fairly be looked on as more capable of grappling with this change than with others: of which more again.

I have said it is not my object to speak of fatty change generally. My present wish is to direct attention to a few points connected with this change when it affects the heart, and, more particularly, the diagnosis of this state. It will, I think, be admitted that this point is one of grave importance not only to the physician, but also the surgeon. You must be now well aware that all, or very nearly all, the cases of sudden death under the use of chloroform, have taken place in persons affected with fatty hearts. This fact alone would invest the subject with consequence; to say nothing of the interest it presents to the physician. It is, in fact, a common ground for both, and well worthy their deepest attention.

It is necessary to begin these remarks by avowing the great difficulty which surrounds the diagnosis of fatty heart. Of the common affections of the organ —and this change may fairly be classed among these—there is none which presents more; and though on a former occasion I have directed attention to this point, it is essential to do so, but very briefly, again. I believe here, as with other diseases difficult of diagnosis, that the very first step in advance consists in our getting a clear idea of the difficulties which must be surmounted. Why, then, are there difficulties in this particular affection, more than in others of the same organ? One of the reasons was given by myself so far back as the year 1849; and I would now state my impression that the fact is one of moment, as bearing directly on the point under discussion. In the course of some investigations made in that year, I was led to observe that fatty disease of the heart and disease of the valves are not usually found together. This was, at first, an impression; but as this may be erroneous, I set about collecting data on which to found solid conclusions, and in a short time had collected some 53 cases. Of these, I found the valves were healthy in 43, which left 10 only of an opposite character. Here, then, was a fact of some consequence; and which I have taken every opportunity of testing since, and with no other result than still further confirming the point. I have noted 152 additional cases, so that the entire now amounts to 205;* and of these the valves were diseased in only 30. These numbers, I think, speak for themselves, and appear to myself to prove that valvular disease and fatty heart are rarely coexistent. The character of disease of the valves too, even when it does exist, is worth nothing;

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* In tabulating these cases, I found it impossible to separate those which have been properly called true fatty degeneration from the others. I believe, however, that when fat exists in unusual quantity on the heart, it is rare to find the muscular structure beneath perfectly healthy.

for it is very generally, though not invariably, of the thickened leathery kind: in fact, it is fatty disease of the valves, as contradistinguished from what is called ossific deposit. And this fact, again, has an important bearing on the progress of these cases, though I am not aware it has been noticed at all; for even though the valves be thickened, they may still be quite competent to perform their functions, at least so well that the life of the patient will not be shortened. In such, a souffle may be present, and persist for years and years without change, its character all through being very soft, and in some I have seen, hard to catch. The character of the souffle then has, when present, an important bearing on the case.

But before saying more on this point, I would notice a second, and, as it appears to me, a most important reason, why the diagnosis of fatty heart is often so very obscure. I allude to the fact that this change may be, and often is, partial. Of the fact you are all aware, and know that a very small portion of the left ventricle may be quite degenerated, the remainder being comparatively sound; and that, when rupture occurs, it is much more commonly in the walls of this cavity, and in a spot where they are both degenerated and thinned. Now, from this point it follows that five-sixths of the ventricle may be quite fitted to carry on its functions, and yet the other sixth be in a state which renders it liable to give way, so causing instant death; and all this without any physical sign which would be available during the lifetime of the patient. Important as this consideration is, however, it is not in connection with partial degeneration of one cavity to which I wish now to direct your attention, but to the same state when it affects one side of the organ differently from the other; that is, when the left heart is more degenerated than the right, or *vice versa*. That this state occurs is perfectly well known; but it may be questioned whether the deductions which arise directly from it have received that attention, if any, which they appear to me to merit. Indeed, I am not aware of any author who has dwelt on this special subject at all. As illustrating what I mean, attention may be directed to the fifty fatal cases, under the use of chloroform, detailed in the able work of the late Dr. Snow. Any one who has read these cases may recollect how pointedly it is stated, I believe in every one of them, that the pulse at the wrist was closely watched, and, in almost all, continued to beat steadily till the very instant of death. Now it is not to be denied that watching the pulse is essential in such cases. But it is fully as essential to recollect that the healthy beat of a radial pulse may not be, and often is not, a guide to the state of the right heart. Hence the latter may have its action fatally stopped, by such an agent as chloroform, at the very moment when the left ventricle is carrying on its functions, to all appearance, healthily. And the examination of all the fatal cases seems to lead to the same conclusion; for it will be recollected that fluid blood and greatly distended right cavities were found in very nearly every fatal case. In point of fact, we have no pulse to guide us as regards the right heart; and hence a most important assistance is wanting to aid our diagnosis. In following out this part of my subject, I have been able to collect only a comparatively few cases; for attention not having hitherto been directed to the point, by far the greater number of those who have detailed cases of fatty heart have drawn no distinction between the cases, as to whether the disease was farther advanced on the one side or the other, or both. As it is, Quain gives 22 instances where the point is explicitly stated. Of these, the left ventricle was most affected in 8 cases, and the right in 4. In the remainder, the disease was equally divided. But I would not lay any great stress on these numbers; for they are too few to draw safe conclusions from. Two points, however, they show clearly: that either side of the heart may be seriously damaged while the other is comparatively healthy; and, secondly, that the disease to which the right heart is by far the most liable is that of fatty change: I mean as contrasted with valvular disease.

For so far, then, your attention has been mainly drawn to two points: first, that fatty degeneration and valvular disease rarely coexist; and, secondly, that the fatty change may be in great part limited to one or other side of the heart. But facts like these are useless, unless they lead to some practical results. Let me, then, draw some conclusions which appear to myself to follow directly from them.

Dr. Stokes, in his last able work, speaking of the diagnosis of fatty heart, lays down the following proposition:—"That although this affection may exist without valvular disease, yet the coexistence of a certain amount of alteration of the aortic valves is common; so that the combination of a slow pulse, a feeble impulse, and a diminished first sound over the left ventricle, attended with a single murmur, while the second sound remains clear, will be sufficient for the diagnosis of the disease in many cases." Now, I believe this proposition to be correct as far as it applies; and it is certainly interesting to observe that it bears out curiously, by examinations on the living, the state of morbid parts, to which your attention has been directed this evening. For you will recollect it was stated that when valvular disease exists with fatty heart, the valves were what might be called leathery; that is, a state which might give rise to a murmur with the first sound, and yet leave the second healthy; and my own examinations on the dead body showed me that the valves, in this state, were quite competent to prevent all regurgitation, and thus give a healthy second sound. The proposition, I have said, was correct as far as it applies; but after the numbers given this evening, it is obvious it must be taken as proving the exceptional case. For they show, to my own mind indisputably, that fatty heart is much more commonly found existing by itself than with valvular disease. My first paper on the subject appeared five years before Dr. Stokes's work, and I take it for granted must have escaped his notice; otherwise I think his views would have been modified by it.

In connection with this thickened state of the valves, as contrasted with ossific deposit, there is another point worthy of notice. It has been long usual to connect visible pulsations of the arteries with open aortic valves. I satisfied myself, many years back, that this statement must be received with exceptions. In other words, you may have visible bounding of the arteries, where the valves of the aorta are not open, and where they prevent any regurgitation; and it is, as far as I am aware, when the valves are partially thickened that this state of things is to be observed. In such cases you may have a single first sound, as observed by Dr. Stokes; but in addition you may have—for it is not constant—visible pulsation of the arteries. And it need scarcely be observed that this bears, in the most direct way, on our prognosis; for this pulsation is not of the serious character of the disease described so well by Dr. Corrigan, and, I know from observation, does not affect the patient's life in the same way, and may go on unchanged for years. This thickened, and, as I believe it may be called, fatty state of the aortic valves, it is then essential to distinguish from any other diseased state of the same parts. It does not, I repeat, affect life in the same way as other valvular disease; is found chiefly in connection with fatty change in the texture of the heart itself; gives rise, in some instances, to visible bounding of the arteries, but at the same time not allowing of regurgitation; and, if to Dr. Stokes's observations my own be added, may, I believe, be diagnosed during life.

We now pass on to a consideration of those cases of fatty heart where no valvular disease exists; and here it is, in truth, that the diagnosis of fatty heart really commences; in other words, in a considerable majority of cases, no morbid sound exists by which our attention might be directed to the organ. If there be a morbid sound of any kind, it must lead to further investigation. But in its absence matters become very different. Hence we must start with the definite idea, that the great probability is, no morbid sound will be present to assist us. But, before going further, I would call attention for a moment to one or two points, which, in an inquiry of this kind, may not be out of place.

In the first place, I would notice the very peculiar arrangement of the muscular structure of the organ. A boiled heart is an excellent way of showing the very extraordinary way in which the muscles are interlaced with each other, and yet at the same time so disposed of in layers one over the other, that they might be described as being separate. To this state of parts we must add the peculiar arterial supply; for the coronary arteries barely, if at all, inosculate. In the large nervous supply, too, we must not overlook the close connection of the heart with the system by means of the eighth pair, at the same time that it receives a large supply from the sympathetic, and has, so to say, a special supply within itself, in the existence of ganglions found in its substance, and discovered, I believe, by Lee. In the last place may be noticed the way in which fatty disease exhibits itself in this organ. It is often, as all are aware, in spots which may be wonderfully isolated, being surrounded by healthy structure; or, it may be in layers, giving a striated appearance to a section of the walls of the particular cavity affected; or, should the entire thickness of the part be attacked, it is then usual for the inner surface to be the most diseased; or, with the muscular structure healthy, fat may be deposited on the surface of the organ in such quantity as to impede its action, and so constitute disease.

Keeping now these facts, both of the healthy and morbid heart, in view, on what, then, is the diagnosis of this disease to be founded? And it is to be remembered that you have no abnormal sound to assist you. Attention must be caught if there be any unusual murmur. But the existence of murmur is the exceptional case. After a good deal of attention to the subject, I really see no means of making a diagnosis, except, after the French method, by the way of exclusion; and it even is not all that can be desired. I am well aware that writers give several physical signs as diagnostic, such as a weak beat at the heart or of the pulse, or muffled, distant, or weak sounds. But I have the strongest conviction on my mind that, in so doing, they have not made allowance for what obtains in health. They have argued as if the impulse, sounds, and pulse were, so to say, fixed quantities; which I believe to be an error. For I have satisfied myself—as others, I think, must have done—that, within certain limits, and in a state of perfect health, both the sounds and the impulse of the heart vary very considerably; and so it is that you may have a strong or a weak pulse or impluse, and a great variety in the intensity of the sounds of the heart; and all these, I repeat, within the circle of health. The very same remarks, too, apply to the respiration, as I am sure all present must have observed. If, indeed, we see a case where, after the sounds have been natural, they then become muffled or weak, such would be a source of diagnosis. But every one is aware that cases do not so come under notice, and that our opinion must very usually be formed from one or two observations. Should the disease be in the very advanced stage, then also, from the extreme feebleness of the sounds and impulse, assistance is afforded us. But at this period there are other signs which clearly show the state of the organ; and I would speak of an earlier stage, when it is really of much greater moment to make out the disease.

For the reasons just given, I would then say that, in the comparatively early stage of fatty heart, we must look with great caution to either impulse or sounds to assist the diagnosis, unless in the exceptional case of which I have spoken. There is a physical sign, however, which, though not always present, may give us valuable assistance. Nor do I find that any writer has noticed it in connection with the diagnosis. I speak of enlargement of the heart where there is also fatty degeneration, and this without valvular disease. In Quain's valuable tables, which I take as independent observations, and so going to confirm my own, out of 83 more than half presented this state. Hence I cannot but conclude that enlarged heart forms an important element in what may be called the natural history of the affection; and I do not find that, in this point of view, it has been noticed by any recent writer. Fatty change is, in truth, by far the most frequent cause of enlargement of the organ, where there exists at the same time no valvular disease. For every one must be aware that hypertrophy *per se*—the heart's texture remaining sound—is very rarely met with. Hence, if we have an enlarged heart and healthy valves, the strong presumption is that the organ is fatty. But even with a previous knowledge of this fact, I am ready to admit that enlargement, even to double the average size, is not by any means so easily made out as might *a priori* be supposed. In the great majority of the cases, there is more fat than natural under the skin; and nothing is more common than to find it in quantity in the anterior mediastinum, to say nothing of the varieties to be met naturally as regards the relative position of the lung and heart. Still the difficulties may, I know, be often overcome by an accurate examination; and I would specially mention the plan of using percussion in varied positions of the body. But some one may ask here, is not this enlargement of the organ just as likely to be overlooked as any other physical sign connected with the disease? My answer is in the negative; and for this reason, that the pulse at the wrist leads us to look for it. You are all aware that on this last sign much has been written as diagnostic of fatty heart. I must here state my conviction, that it has been the exceptional cases which have been commonly described as marking the disease: such as slow, unequal, intermitting, or very rapid pulse. Now, I do not deny that these occur in cases of fatty heart. I have met examples of all of them. But what I do say is this: that the pulse most usually met is natural as to frequency; at the same time that it is fuller, passing sedately, as it were, under the finger, and giving the idea of being diffluent. It is, in truth—contrary to what is usually taught—the pulse of hypertrophy, but not attended with the same strength; and Hunter's expression might almost be applied to it, as being "action without power." Now, you will observe that such a pulse is exactly in keeping with the state of the heart which has been just described; it is what we would expect; and whatever doubts may arise about the most common character of pulse, there can be none, it may be stated, as to the frequency with which enlargement of the heart occurs in fatty degeneration, being fully one half the cases detailed. I stop not to inquire the precise cause of the hypertrophy, but only to state the fact, and my own experience about it.*

Of the other kinds of pulse met in these cases I have little to say. Next in frequency to what has been described I would place inequality of the beats, not intermission. Some writers, I observe, speaking of this sign, seem at a loss to account for it, in the absence of valvular disease. To myself a fair explanation is afforded in the peculiar anatomy of the organ, glanced at this evening, taken in connection with the fact that fatty disease exhibits itself in spots, patches, or layers; a state of parts which may, without any straining, be expected to give rise to unequal action of the organ, and, consequently, unequal pulse: and, indeed, I may say that I have seen cases where a kind of double beat at the heart was attended by but a single one at the wrist.

Of the several symptoms in connection with fatty heart, and referred to the head, chest, or abdomen, it is not my intention here to speak. I would refer to the several writers on the subject; but more particularly to the able work of Dr. Stokes, which, as far as I am aware, contains the best *résumé* of the matter. There are just two symptoms which appear to me to call for a moment's notice. The first is the dyspnœa, which, you are all aware, constitutes such a striking feature of the disease, especially in the middle and latter stages. Now, it is not the symptom itself to which I would direct attention, but the disproportion which almost constantly exists between the complaint of the patient and the labor of the respiration as evidenced to our eyes. In the history of the complaint, I am really not aware of any other single symptom more striking than this. The patients tell you that their great suffering is from dyspnœa, that they cannot make the slightest exertion; and yet, when you look at them, you see little or no corresponding movement of the chest. The contrast between this state and where there exists valvular disease, as, for instance, of the left auriculo-ventricular opening, is truly striking. Nor does this state exist only where there is fatty heart. It will be observed where the patient, in addition, gets an attack of bronchitis, very slight to all appearance, and yet a most fatal affection; and I have reasons for knowing that grave errors in prognosis have arisen in these cases, as, I believe, from the very cause to which I allude; that is, the respiration looks so quiet as to throw the medical man off his guard. It was gradually that I arrived at what appear to be fair reasons for this state of things. In the first place, the cartilages of the ribs are very generally more or less ossified; in the second, the intercostal muscles are very apt to be either covered with fat or degenerated; and, in the last place, the heart itself, while seriously altered in its texture, does not present any impediments, in the shape of valvular disease, to the current of the blood; and thus it is, with a disease of slow progress, as we must suppose fatty degeneration to be, that the system gets gradually accustomed to the change, and to a degree which it is impossible for it to do when there exists a direct obstacle to the circulation. It has further appeared to me that this want of proportion—as it may be well called—between the patient's sufferings and the physical exertion to relieve them, is particularly to be observed when the right heart is the furthest advanced in disease; and bearing out this, I have seen cases where the pulse at the wrist was steady and equal, not beating more than 86 in the minute, and this going on to the very last moment of existence. At any rate, whatever the explanation be, the fact itself has repeatedly come under my notice, and appears to me one well worthy of attention.

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* It has yet to be determined whether slow pulse occurs in any particular form of fatty heart. That it is by far the exceptional case, I have no doubt; and were I to venture to connect it with any one state of the organ, it would be that in which, without any enlargement, there existed true degeneration of the heart's texture; the patients being anything but fat. In most of such cases the effects of wine are truly remarkable.

In the last place, I would notice a general sign which I think of consequence to look for, even though not always present. I mean a failure in the animal heat. It has been noticed casually by some writers. I would be inclined to give it much greater prominence. In some cases I have seen it was very striking; and it is worthy of note, as not being confined to the extremities alone. The patients have complained of it in the sides, and back, and stomach. Any complaint of this sort should ever, I believe, catch our attention.

It was my intention to have said something on the treatment; but my present limits forbid. I shall, therefore, only observe, that I was glad to find the possibility of a cure in the early stage of fatty heart, and which was strongly advanced by myself ten years ago, has since then been supported by Dr. Stokes, in opposition to the views of Quain and others. But I can only here remark, that if we should attempt the cure, we would not have, in the majority of cases, any valvular disease to contend with.

In concluding these remarks, which it must be recollected are strictly cursory, it may be well to throw into a series of propositions the chief points brought forward.

1. That fatty change in the heart is rarely attended with valvular disease.
2. That, with our present knowledge, the proportion seems to be as six to one.
3. That when valvular disease exists with fatty heart, it is commonly the aortic valves that are affected, and these are thickened and fatty.
4. That this state of the valves rarely allows of regurgitations.

5. That it may give rise to a soft souffle with the first sound of the heart, leaving the second healthy, as observed by Dr. Stokes.

6. That there are grounds for supposing that this fatty state of the aortic valves may go on for years, without affecting the duration of life.

7. That visible pulsation of the arteries often attends this state; but as there is no regurgitation, it so differs from the disease described by Dr. Corrigan.

8. That enlargement occurs in more that half the cases of fatty heart.

9. That, in keeping with this, a large diffluent pulse is the most common kind to meet in fatty heart.

10. That either a very slow, unequal, or rapid pulse is only met in exceptional cases.

11. That the French way of exclusion is, in the absence of valvular disease, the chief way of arriving at the diagnosis of fatty heart.

12. That there is often a marked disproportion between the complaints of the patient of dyspnœa, and the physical efforts made to relieve it.

13. That this is possibly most marked when the right heart is the furthest advanced in disease.

14. That a marked diminution of the animal heat, which may, too, be confined to unusual parts of the body, is often met in connection with fatty degeneration.

15. That fatty degeneration of the right heart is the disease which most frequently affects that portion of the organ.—(*Edinburgh Medical Journal*, July, 1859.)

2. ON A PECULIAR AUSCULTATORY PHENOMENON. By *J. Thorburn, M.D.*, Surgeon to the Chorlton-on-Medlock Dispensary, Manchester.—Having several times met with a rather peculiar auscultatory phenomenon which I do not find described or explained in works on the subject, I wish to record it, in the hope that such other members of the profession who may have encountered it in practice may be enabled to compare notes with me, and thus, perhaps, elicit something which may be of use to other auscultators. The first time I heard the sound in question, I was somewhat puzzled as to its meaning; and even now, though I am quite sure of its existence, I am not positive as to its real pathological bearing.

The best mode of describing the phenomenon will be to detail one of the cases in which I first encountered it.

This patient was a young man suffering from a digestive disorder, and with no symptoms of chest-disease. I examined the thorax merely as a precautionary matter, and found percussion perfectly normal everywhere; no unusual dullness at either apex, nor in the cardiac nor sternal regions. On auscultation, the cardiac sounds were quite healthy, as was also the respiratory murmur over the greater part of the chest. Over the most of the left apex, however, and at the inner third of the right, there was audible what I took to be a loud blowing murmur with the first sound. It was distinctly of a blowing character, without much harshness, perfectly synchronous with the cardiac systole and with the pulse, and very loud. There was no *bruit* in the cervical vessels. To examine the sound more carefully, I made the patient hold his breath, when, to my surprise, I found that the murmur completely ceased. This I repeated several times, that there might be no mistake. It was perfectly plain that, though completely identified with the vascular systole, the sound was present only during the expiratory and at the end of the inspiratory process. There was nothing else abnormal present; and I treated the digestive symptoms, giving no opinion about the thoracic murmur. The patient has since continued for more than two years in apparently perfect health; and I have ascertained that the same sound is still present, but much weaker.

In this case, then, the sound was met with in one who, in the absence of other evidence, has no thoracic disease. I met with a perfectly similar sound in a woman, who had distinct evidence of tubercles and of a large vomica on the left side. It was confined to the same regions; and post-mortem examination, while it confirmed the existence of the phthisis, showed nothing else to account for the peculiar murmur. I have noted five or six other cases where I have met with the same thing, and in no particular were they the least alike with regard to the existence of tubercle, cardiac, or aortic disease.

The question then is, what produces this sound, and what condition may we regard it as evidencing? It must be either a respiratory sound, modified by the heart or great vessels so as to have a cardiac rhythm, or a vascular sound modified by the respiration. From a careful examination, I have come to the conclusion that it is of the former character; and that what is heard is the expiratory murmur, and the end of the expiratory murmur itself, *saccadée* or jerked by some undue impulse. I think it probable that this impulse is communicated by a nervously excited, or perhaps *slightly* dilated aorta, just as the action of the heart may sometimes give a cardiac rhythm to a friction-sound, which is really pleural. The greater comparative weakness of expiration will account for its being heard chiefly at that time.

There are certainly some difficulties in the way of this explanation; but I cannot arrive at a better. I cannot conceive that any sound of vascular origin so loud as this could be masked by inspiration, or lost when the breathing ceased.

One would, however, suppose that some similar jerking of cardiac rhythm should be heard over the trachea; and in one case, though only in one, I fancied that this was the case. In this instance, the patient declared also that, after much running or the like, he could hear and feel his breath come out "in jumps," as he expressed it. I have myself felt the same thing after great exertion, and have ascertained that it corresponded with the pulse. It has always, however, disappeared before I could have a stethoscopic investigation. I believe that, in the cases I have cited, the condition is owing to slight overaction, from some cause, of the aorta; but I should be glad if any one could afford a better explanation. I am convinced that the sound is not very infrequent; that, though loud, it does not indicate serious organic disease; but that, by a not very skillful examiner, or by one unaware of its existence, it might easily be supposed to have such an indication.—(*British Medical Journal*, June 18, 1859.)

3. EFFECT OF RESPIRATION ON THE POSITION OF THE HEART.—At a session of the College of Physicians of Philadelphia, *Dr. Da Costa* read the following paper on this subject:—

In auscultating persons who supposed themselves affected with cardiac disease, I have had my attention directed to several points connected with the influence of the respiration on the heart, which seem of sufficient interest to warrant my laying them this evening before the College. The phenomena in question may have been noticed by others, but I have not been able to meet them referred to, and to me, at least, they presented the allurement of novelty.

If a full inspiration be taken, it may be usually observed that the action of the heart becomes slower, again to quicken in expiration; and, secondly, that the impulse between the fifth and sixth ribs is hardly or not at all perceptible, while the sounds of the heart are only very faintly heard. The latter fact has been treated of in a paper which is now in print.* The effects of inspiration in rendering slower, and of expiration in quickening the movements of the heart, have been well investigated by able physiologists; but the change of the position of the heart during the acts of respiration, and the causes of this change, are comparatively unnoticed, and are the subjects which I wish especially to lay before the College.

The impulse, then, at its normal situation, disappears if a long breath be drawn, and the heart-sounds at the left apex become almost inaudible. If, now, while the inspiration is held, the chest be carefully watched, a new impulse can be seen, somewhat lower than between the fifth and sixth ribs, and toward the median line, at a point in which, in quiet breathing, no movement is perceptible.

Desirous of investigating these phenomena, I examined this new impulse—if, for convenience sake, it may be so termed—in a series of observations, made at different times, on healthy persons, having in each instance first accurately ascertained the extent of the percussion-dullness of heart and the normal position and strength of the impulse of quiet breathing.

Inspiration.—During a full inspiration, in ten adults, the upper border of percussion-dullness over the heart shifted to nearly the extent of an intercostal space. The impulse became, in all the instances examined, entirely or almost entirely imperceptible under the nipple, between the fifth and sixth ribs; but it was distinctly felt downward and inward, at a spot nearly on a level with the ensiform cartilage, immediately below the cartilages of the ribs, and varying from three-fourths to one and a fourth inch from the median line. In some cases in which it was measured, the new point of distinct impulse was three and a half inches from the impulse-beat of quiet breathing.

Percussion over this new point shows dullness and greater resistance to the finger. Near the nipple, between the fifth and sixth ribs, the sound becomes clear. Compared with the point of previous impulse, the beat is not quite as strong; the cardiac sounds heard over it are distinct—far more distinct than near the nipple, where they are almost inaudible, but not quite as distinct as they are at the apex during natural breathing. Especially is this the case with the first sound. The pulse corresponds, during full inspiration, to the somewhat diminished impulse; it is feebler. Yet neither diminished impulse nor feebler pulse is an invariable accompaniment of a forced inspiration.

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* American Journal of the Medical Sciences, January, 1859.

Expiration.—During a full expiration the phenomena that are observable are almost exactly opposite. The percussion-dullness over the heart increases markedly, especially at the upper border. The impulse is forcibly felt, and is extended over a larger space. Its point of distinctness moves upward; in some persons by more than the breadth of the rib. It may or may not be at all perceived lower down. The first sound of the heart increases in loudness, but by no means uniformly in distinctness; in some persons it is during a held expiration weightier but not less distinct than during quiet breathing.

Having settled these points by repeated clinical inquiry, I sought to explain the cause of the phenomena. To me the conclusion seemed inevitable that not only is the heart during a full inspiration lowered, but its whole position is changed. It is carried not only downward, but its apex is pressed forward and inward by the distended lung. If this be correct, it is evident that the effects of respiration upon the position of the heart have been erroneously stated even by those few authors who have said anything at all on the subject. To quote from standard authorities:—

"In inspiration, also," say Sharpley and Quain, "when the diaphragm sinks and the lungs expand, the apex is withdrawn from the thoracic parietes."

In the article "Respiration," in the *Cyclopedia of Anatomy and Physiology,* vol. iv., John Reid remarks: "But during forcible inspiration the heart recedes deeper into the chest, and during expiration it again comes forward."

Valentin, (p. 185 of his *Physiology,*) mentioning the fact that during a full inspiration the heart's impulse is not as distinctly felt, attributes it to the intervening lung. He further adds: "And if a person turns in bed from the left side to the right side, the sensible impulse may likewise disappear. These facts, at any rate, teach us that the heart, which is inclosed air-tight in the chest, does not under all circumstances press against its wall."

Now these statements all indicate that the heart during a full inspiration recedes, or at any rate is removed from the walls of the chest; but do they explain the fact that a new impulse-beat is perceptible lower down? Certainly not. The fact itself is not at all alluded to; the explanation of the fact is not possible according to any of the views just stated.

Walshe, who with characteristic completeness discusses the effects of posture and respiration upon the heart, states that inspiration, by carrying the diaphragm downward, lowers the heart sometimes by an entire interspace, and removes the organ somewhat from the thoracic walls; "but it is to be remembered," he concludes, "that the depression of the diaphragm displaces the base more than the apex."

It is true that this lowering of the organ might account for the new impulse, by supposing it to be that of the right ventricle; but the disappearance of the apex beat from its normal point, and the visible impulse at another, seemed to me to demand a different explanation, namely, that the heart is not only somewhat lowered, but changed in its whole position, during the act of inspiration. It is carried not only downward, but its apex is moved inward and forward, and this change of position can only be brought about by the pressure of the distended lung.

Reasoning on the phenomena as observed in the living, led to these conclusions. The aid kindly afforded by Dr. Agnew enabled me to test by experiment their truth. The sternum of a subject was removed, and we then proceeded carefully to inflate the lungs. The change in the position of the heart was most striking. As the lung rose more and more, until it nearly reached the ribs, the apex gradually turned inward, was somewhat lowered, and came distinctly forward. If it had then struck the parietes of the chest, the impulse would have been visible at exactly the point in which it is observed to strike in the living subject during a full inspiration. The experiments were subsequently repeated, and invariably with the same results.

The next subject that suggested itself for inquiry was, what share the diaphragm has in producing the change in the position of the organ. On the inward and forward movement of the lower part of the heart it evidently has none. The descent of the diaphragm can, of course, only influence the heart through the connection of the pericardium to the diaphragm; and, again, through the attachment of this membrane to the large vessels after they leave the heart. Now, the effect, if the diaphragm move, will be to lengthen the vessels, and thus to lower the whole situation of the heart, but not to turn its apex inward. Nor is it by any means certain that the downward action of the diaphragm can lower the heart much. The tendinous centre of the diaphragm, to which the pericardium is attached, moves but little, far less than is usually supposed, and its descent is further counteracted by the connection of the deep cervical fascia with the upper end of the pericardium. In order to study the motions of the diaphragm, the abdominal walls of a subject were opened, and all the viscera, excepting the liver, removed. The lungs were then inflated by a tube passed into the trachea. The muscular fibres of the diaphragm descended more and more, and finally bulged out on each side of the tendinous centre; but this neither descended nor ascended much during the acts of inspiration or expiration.

These experiments prove the displacement of the heart to be only in part produced by the diaphragm, much more by the sweep of the distended lung. The forward motion of the organ owns the same cause.

In cases of hypertrophy of the heart the act of inspiration produces a similar displacement; but whether as much, I am not yet able to say.

It may be well here to allude to an argument which might be urged against the interpretation of the changed impulse. As during a full inspiration the ribs are elevated, the finger applied over them is naturally brought up higher, and the heart might thus appear displaced, when, in reality, the ribs are. This is true. But it will not explain an impulse perceived near the median line; and, again, the experiment of removing the sternum permits the influence of this source of fallacy to be exactly appreciated.

It is hardly necessary to discuss the causes of the phenomena observed in expiration. They follow as a corollary to those of inspiration. The recedence of the lung, the somewhat altered position produced by the different action of the diaphragm and by the absence of all traction on the large vessels, will explain the increased extent and change of impulse, and the enlarged percussion-dullness. There are also probably other causes connected with the quantity and state of the circulating blood, and the varying distention of the heart during the respiratory acts, which must be taken into account; but until physiology lifts the veil which enshrouds the relation of the circulation to the respiration, no absolute conclusion can be arrived at as to an apparent increased size, and, still more so, none as to changes in the strength of the impulse.—(*American Journal of Medical Sciences*, April, 1859.)

ANATOMY.

THE STRUCTURE OF THE ULTIMATE AIR-TUBES, AND THE DISTRIBUTION OF THE BLOOD-VESSELS OF THE HUMAN LUNG. A paper read before the Royal Society of London, by *A. T. H. Waters, Esq.*, of Liverpool.—The bronchial tubes terminate in a dilatation, into which open a number of cavities to which various names have been given, but which the author proposes to call air-sacs. The air-sacs connected with a terminable bronchial twig, with their vessels, etc., constitute a lobulette. The lobulette consists of from six to twelve air-sacs; the latter are somewhat elongated cavities, lying side by side in the lobulette, and separated from each other by thin walls; in shape they are polygonal, from mutual pressure of their parietes. They all communicate with the dilated extremity of the bronchial tube, which forms the common mouth or centre of all the sacs; they have no lateral orifices of communication with each other; they often divide or give off other sacs; the air-sacs of one lobulette do not communicate with those of another. The walls of the air-sacs are covered by a number of small, shallow, cup-like depressions, separated from each other by partial septa. These depressions, or alveoli, are very numerous; their number varies in different air-sacs, from eight to twenty. The lobulettes are supported externally by the pleura, but within the lung, in part by the bronchial tubes and blood-vessels. The membrane forming the walls of the air-sacs in a lung inflated and dried is very transparent; it constitutes, by its projection toward the centre of the sacs, the septa of the alveoli. Each lobulette is distinct and separate from those which surround it. The separation may be sometimes seen in the inflated infants' lung, but the observation of the fœtal lung affords the best proof of it. The author alluded to investigations he had made on the lungs of fœtuses, which had confirmed the view he had taken of the arrangement of the ultimate pulmonary tissue, and of the separation between the lobulettes. The air-sacs are fully formed before birth, and each lobulette is seen as a little red body attached to an air-tube. By a partial or complete inflation of the fœtal lung, the arrangement of the air-sacs may be distinctly made out. The bronchial tubes at their termination have a special character. A number of alveoli, like those of the air-sacs, is found in their walls. They are best seen in the lungs of some of the lower animals, as the cat. The author has found them, in the infant, in the last divisions of the bronchial tubes and their dilated extremity; in the adult, only in the dilated extremity. They seem to become obliterated with advancing age. Their existence was first pointed out by Rossignol. The blood-vessels of the lungs: The pulmonary plexus is situated in the walls of the air-sacs; when formed, it maintains a tolerably uniform diameter throughout; the spaces between the vessels, in an injected and inflated preparation, are somewhat larger than the vessels themselves. The branches of the pulmonary artery do not anastomose till they reach the termination of the bronchial tubes; they anastomose freely in the air-sacs. The author believes that the vessels of one lobulette do not anastomose with those of another; that, consequently, in the adjoining walls of two lobulettes, two layers of capillaries lie side by side, and therefore in such situations the blood is not fully exposed to the air on both sides. The radicles of the pulmonary veins issue from the periphery of the lobulettes, and, forming larger vessels, run in the interlobular spaces to the root of the lung. After briefly alluding to the general opinion of the distribution etc. of the bronchial vessels, the author describes the result of his own injections. Injection of the pulmonary artery, so as to fill the plexus, but not the veins, does not inject the vessels of the bronchial tubes; but if the veins are filled, the bronchial tubes become partially injected. Injection of the pulmonary veins, whether the plexus be well filled or not, always injects the bronchial tubes. Injection of a bronchial artery, when fairly within the lung, produces injection of the bronchial tubes, and the fluid returns by the pulmonary veins. It is difficult, in man, to fill the vessels of the extreme bronchial tubes through the bronchial artery. The bronchial veins: The author has never been able to find the so-called deep bronchial veins as venæ-comites of the arteries. The only veins he has found have been one or two small ones, usually one, at the root of each lung, which, on being injected, were found to terminate in the structures about the root of the lung, and not to accompany the arteries within the lung. From careful injection and repeated examination of a large number of specimens, both of man and the lower animals, the author draws the following conclusions of the distribution and termination of the bronchial vessels. The bronchial arteries are distributed to the bronchi, bronchial glands, bronchial tubes, etc.—both their mucous membrane and deeper parts—the blood-vessels, and areolar tissue of the lungs; and they terminate, first, those about the root of the lung, in the bronchial veins; second, those within the lung, in the pulmonary veins. The bronchial arteries do not establish any communication with the pulmonary arteries. The author concluded by alluding to the views of previous observers.—(*Medical Times and Gazette*, July 16th, 1859.)

TOXICOLOGY AND LEGAL MEDICINE.

1. Application of Crystals of the Blood to Legal Medicine. By *Prof. Bryk*, of Krakau.—By heating dried blood with organic acids, and principally with concentrated acetic acid, it is easy to obtain hematin crystals, even when the quantity of blood is excessively small. By this crystallization, blood-stains can be recognized, which could not be distinguished by the microscope, from the characters of the globules. It is sufficient to reduce a small part of the matter, which composes the suspected spot, to a fine powder, to put it on a

glass plate, to cover it with a small glass, then to add some drops of crystallizable acetic acid, and to dry it slowly on the sand-bath. After having washed the preparation, it is put under the microscope. We then discover crystals in the form of prisms or rhomboid plates, the larger angles of which are commonly round, and which have a brownish-red, brown, or yellow color. These crystals are less abundant when the blood is putrefied or mixed with pus. When there is an admixture of pus, they are more easily obtained by previously treating the stains with ether.

When these crystals are treated with a concentrated solution of caustic potassa, they change gradually from the green to a purplish-red color; with concentrated sulphuric acid, they assume a greenish-yellow, then a reddish-brown, impure violet, brick-red, and finally a rosy color; this character suffices to distinguish them from all other stains. Those which are produced by bile, react, however, in the same manner with sulphuric acid, but they are not modified by potassa.

These changes of color are very easily obtained, by applying the same reagents directly on the stuffs (not colored) which show the blood-stains, even when they have been washed, provided they retain some atoms of hematin.

The knowledge of these facts is owing particularly to MM. Schmidt, Rose, and Brücke. Professor Bryk adds, that blood-stains readily lose these characters, and furnish no more crystals after having remained for some time on wood.

The character of crystallization, first pointed out by Feishmann, has already found, in the hands of Brücke and Virchow, medico-legal application. This means, however, permits us to recognize only the presence of blood; it furnishes no information in reference to the species of animals from which the blood comes.—(*Wiener Medizinisch. Wochenschrift*, Nos. 42, 44, and 45, 1858.)

2. SOUTH AMERICAN ARROW-POISON. By *Wm. R. Hammond, M.D., U. S. A.*, and *S. W. Mitchell, M.D.*—The following is a brief *résumé* of a long paper which appeared in the American Journal of the Medical Sciences for July, 1859, upon carroval and vao, two new varieties of woorara, or curare, as it is termed in France. The authors preface their own observations with an elaborate history of woorara, and of the chemical and physiological labors already bestowed upon it by Rolliker, Bernard, Pelikan, Velpeau, Brodie, etc. They then proceed to describe the physical characters, chemistry, physiological relations, and toxic peculiarities of the two new, or hitherto unknown varieties of woorara which have fallen into their hands. They thus examine separately the two substances carroval and vao, and state in detail the reasons which induce them to consider vao as but a weaker carroval: or else, if we comprehend them aright, as bearing to carroval some such relation as brucia bears to strychnia, or cinchonia to quinia.

Both poisons yielded, to appearance, one and the same essential principle, a new alkaloid, which the authors have termed carrovalia. This substance, whether from vao or carroval, was of a deadly potency; since, however, the authors explain that their supply of the poison was not sufficient to enable them to complete the chemistry of the subject, we shall await some further developments in regard to the tests for the new alkaloid. Although the two poisons were studied separately, it is unnecessary here to view them apart, since it has been shown that the chief dissimilarity is one of degree, and not of kind.

The new woorara, then, according to Drs. Hammond and Mitchell, differs remarkably from that long known to the toxicologists of Europe. Thus the woorara of our authors kills by paralyzing the heart; while the other, or European woorara, destroys by paralyzing the nerves of motion throughout the body. This singular difference completely isolates the carroval and vao poisons from all other woorara hitherto examined, and approximates them in character to the upas poison, so ably investigated by Professor Rolliker, whose toxicological labors are as yet little known or appreciated in this country.

We refer to the following "conclusions," as setting forth what the authors conceive themselves to have proved in regard to these poisons, premising that as they seem to have been finally of opinion that carroval and vao are nearly allied, if not identical, we have thought it unnecessary to copy both sets of conclusions. We have appended to each conclusion, in brief form, a statement of the proofs in favor of the proposition set forth.

1. Carroval and vao are capable of being absorbed from the areolar tissues, and from the stomach of warm and cold-blooded animals. When given by the stomach, both poisons are more apt to cause convulsions than under other circumstances. The larger part of the absorption experiments were made with vao only. From these it was ascertained, say our authors, that it (vao) is also absorbed by the stomach, œsophageal canal, rectum, and skin of cold-blooded animals, (frogs,) with a degree of rapidity which varies; and is rapid or slow as the animal is ill or well supplied with water.

Warm-blooded animals absorb vao from the stomach and intestines when they are fasting, but suffer no ill effects when the vao is given during digestion. That this protection is not due to a mere mixture of the vao with the food of the full stomach, is shown by the fact that rabbits, whose stomachs are always more or less distended with food, are protected only when, owing to the entry of fresh food, digestion becomes active.

Both carroval and vao arrested the heart's action. This was shown by exposing the hearts of frogs, and then inserting the poisons under the skin, when the heart began to beat more strongly, then became paralyzed in parts, and finally stopped, and was found to be so dead, that in most cases no galvanic or other stimulus could induce a single pulsation. After this, the frogs thus poisoned leapt about until the cessation of the circulation produced its usual effect, in paralyzing first the sensitive and then the motor nerves. These secondary effects our authors have shown to follow any arrest of circulation in the frog. Thus, when the heart was tied, sensation and motion disappeared in an hour, even where no poison was given. Both carroval and vao were found to arrest very early the motion of the lymph hearts, and both of them undoubtedly lessened the duration of muscular irritability; while the ordinary woorara either does not affect it, or, according to Bernard, lengthens its duration.

When these poisons are administered to warm-blooded animals, death usually occurs without convulsions, except in the cat, where they nearly always are seen. In animals of this class, the arrested circulation stops the aeration of the blood, so that the checked respiration is to be looked upon as a consequence and not a cause of the injury to the cardiac functions. This was also illustrated in the case of the alligator, whose respiration continued long after the heart had ceased to move. It was also found that artificial respiration was of no value as a means of relief, as might have been suspected from the fact that the poisons destroyed the muscular irritability of the heart.

The authors were unable to discover that these poisons altered the blood, or affected the ciliary movements. They are of the opinion that the varieties of arrow-poison examined by them are of a purely vegetable origin, and contain no trace of the venom of serpents.

3. ON A NEW POISON FROM THE INTERIOR OF CHINA. By *Robert Christison, M.D.*, Professor of Materia Medica in the University of Edinburgh.—About eighteen months ago I received from China a copy of a newspaper printed at Shanghai, giving an account of a formidable poison, said to be used far west, in the interior of the country, for killing game and in warfare.

According to this account, springs had been invented for using it against the British invaders; and as these had been found to answer against goats, much was expected from its aid at Canton. But, unluckily, the sudden peace nipped the scheme in the bud. That the poison might have been employed with deadly effect is very probable, if only one-half of what was said of it be true; for the account in the *Northern China Journal* (April 4, 1857,) represents it to be so virulent that "instant death is inevitable from the slightest abrasion" by an arrow tipped with it. The operator, who prepares it in the shape of an extract, goes on concentrating and strengthening it until a small animal, whose skin is punctured with it, dies instantaneously: not until then, it seems, does he cease to boil down his extract. In the mountainous regions of Chihkiang large game is killed by means of arrows whose neck is encircled by the poison. Even tigers are killed in this way by the Funghwa hunters. Should a limb be struck, the beast writhes awhile before expiring; but should the arrow "hit the body, he leaps forward, staggers, and immediately falls down dead."

This is marvelous enough. But it is also said to be of a singularly volatile or progressing nature. For if the poison "be applied to blood trickling from a little wound, even though only to the lower end of the stream, the blood is rapidly blackened along its whole length; and if the stream be continuous with the wound, the subtle poison will enter, and occasion death."

This poison is the extract of a root called *Tsau-wú;* and the plant is represented to be a perennial creeper inhabiting the central provinces of the Chinese Empire. It is added, that the extract is sometimes applied, as a practical joke, to the tongue of the unwary, "in whom it excites a keen sense of formication."

In the beginning of January last I received specimens relative to this extraordinary poison from Dr. D. J. Macgowan, an American physician residing at Ningpo. The specimens included not only the poison itself, but likewise some leaves and roots of the plant which yields it. The materials are scanty; yet they are sufficient to enable me to ascertain the source of the poison pretty nearly.

The leaves present characters common to several plants of the Ranunculaceous family. Only one of the roots, which are but four in number, is entire; but even the structure of this alone, taken along with its singular impression on the organs of taste, is sufficient to prove that the plant is a species of *Aconitum*, or Monkshood. All the species of Aconitum that I have examined spread by root in the following manner, of which the *A. Napellus* may be taken for an example. During winter there is nothing to be seen but an under-ground tuber, tap-shaped in all the poisonous species, with rootlets from the lower extremity, and an incipient leafy bud at the crown. Early in spring the bud begins to shoot out into the future stem, which attains its full stature toward the close of summer, or a little later. During its progress, early in summer, a little knot forms near where the crown and stem meet; and from this is gradually produced a new tuber exactly like the primary one, parallel to it and connected with it by a small band. Near the close of autumn, when the seeds of the plant are mostly ripe, both tubers seem equally vigorous, and of equal size; but the new one is firm, and continues plump on being dried, while the old one is more watery, shrivels much in drying, and, in fact, soon rots and disappears in the ground, leaving the new tuber to perpetuate the plant next season. Now, one of the Chinese roots shows a portion of the stem, with its tap-shaped, somewhat shriveled tuber at the bottom; and, attached to the crown of this tuber, a plump, firm, tough, tap-shaped tuber of the same size. No one familar with the Aconites can fail to recognize in this Chinese specimen a miniature representation of the root of the *A. Napellus* of Europe, and *A. Ferox* of the Himalayas.

The likeness is maintained in the very singular impression produced by this root upon the organs of taste. A little bit, no bigger than a pin's head, carefully chewed, while it is held in one spot between the tip of the tongue and the lips, produces intensely that strange combination of numbness and tingling which characterizes so remarkably all the poisonous species of the known Aconites. It is an impression so peculiar, that I do not know any plant, not an Aconite, which produces a sensation like it, except the *Delphinium Staphysagria*, or Stavesacre,—another plant of the *Ranunculaceæ*, which, with its whole genus, presents close natural resemblances to the Monkshoods.

I have no doubt, therefore, that the Tsau-wú, or Wú-tsau,—for the name is variously given by my informant in his letter and in the labels,—is the root of a Monkshood. It is probably a new species; for, though like a diminutive *A. Napellus*, it is much whiter and more amylaceous in its interior, and yet evidently, from its taste, much more active. It is by much the smallest aconite root of the poisonous species; for the whole tuber is scarcely an inch long, and delicate in its structure.

It only remains to be seen whether the poison is really prepared from this root. The extract sent to me is still soft, and evidently made with great care and skill. The most minute portion causes in the tongue and lips precisely the same impression as the Wú-tsau root, but with extraordinary intensity. The Wú-tsau is in it therefore; and nothing more is wanted to make a most virulent and efficacious arrow-poison.

I must here enter my protest, however, against some of the statements which have been made to Dr. Macgowan by his Chinese informants, as to the action of this extraordinary poison—and, indeed, against the facility of belief among travelers generally respecting the effects of arrow-poisons used by barbarous and semi-barbarous tribes of men. The Wú-tsau cannot by any possibility travel up a stream of blood, against the current, and into a blood-vessel. It cannot cause instant death in any animal. No arrow-poison can cause instant death. All poisons which act through a wound must take a little time to act; because they act through absorption into the blood upon distant parts—the brain, the spine, or the heart; and a solid poison cannot thus reach its destination in sufficient quantity all in a moment, even though the arrow pierce a blood-vessel.

It is possible to account for the frequent error of travelers as to the alleged instantaneousness of the action of arrow-poisons. The lapse of time is, in the first instance, apt to be overlooked or understated. But, further, if such formidable poisoned arrows as those used by the negroes of the Upper Gambia, or the Macusi tribe at the sources of the Essequebo, be struck into the trunk of even a large animal by means of their strong bows, the arrow may quite well reach a vital part, and thus arrest motion at least, if not occasion very speedy death, merely as an arrow, by mechanical violence. Small animals and birds may be thus brought down suddenly even by the little wooden darts shot through blowing-tubes by the Macusi natives of the Essequebo, as well as other wild tribes. The Macusis use the deadly Urari* poison. But the dart may kill as an arrow quite as well as through means of the poison, should it hit the trunk of a small animal; for its force is surprisingly great. With very little practice, I can blow the little, light, wooden dart 180 feet; strike it at 60 feet so firmly into a board that it cannot be removed unbroken; and transfix with it, at a short distance, a fir board a fourth of an inch in thickness, or thirty folds of cartridge-paper.

I will also venture to take exception to the frequent propensity of travelers and others to magnify savage skill in the manufacture of such poisons, at the expense of civilized ingenuity. The Urari of the Essequebo, the Upo or Upas of Java and Borneo, the Wú-tsau of China, are potent poisons, no doubt. But in potency they never will stand comparison with several of the pure principles which the chemistry of civilized nations has detached from poisonous vegetables. Any tribe of men, compelled by circumstances to obtain their food by shooting game with poisoned arrows, would profit greatly could they substitute digitaline, aconitina, conia, strychnia, and other pure principles of plants, for their own cruder extractiform poisons. These principles, indeed, might be so used as to deal destruction to the very largest animals on the face of the globe.—(*Edinburgh Medical Journal*, April, 1859.)

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* Generally corrupted by English writers into *Wourali*, and by the French into *Curare*. Schomburgk, the best authority, says that the Macusis who make it call it invariably *Urari*.

OBSTETRICS.

1. PUERPERAL CONVULSIONS SUCCESSFULLY TREATED BY CROTON OIL SUPPOSITORIES. *Letter from Mr. Overton.*—Puerperal convulsions are usually so alarmingly dangerous, and cause so much anxiety, both to relatives and friends—ay, and to the medical attendant, at the same time—and are often so rebellious to all treatment, that I trust you will deem the two following cases, extracted from my note-book, worthy of insertion in your columns.

CASE 1.—Mrs. R., aged twenty-four, married about two years. A miscarriage took place six months after marriage, when she suffered considerably from nervous excitement, which, however, soon yielded to appropriate treatment. She was again pregnant in September, 1858, and enjoyed good health till February, 1859, when I received a summons to visit her immediately. I found her suffering from general anasarca, with excruciating pain in the head, restlessness, vomiting, and febrile symptoms. Upon the whole, I did not like the appearance of those symptoms. I prescribed saline aperients, with alteratives, etc.; cold applications to the head. The symptoms did not yield to this treatment: constipation gave some trouble.

March 15.—I was again sent for in great haste; the husband stating that his wife was in a fit, and all feared she was dying. I was soon with her, and found her suffering from epileptiform puerperal convulsions, frothy blood issuing from her mouth, and there were clonic spasms present. I at once abstracted blood from the arm, to about thirty ounces, put six to eight grains of calomel on her tongue, administered an enema of senna, etc., and applied a blister to the nape of the neck. These, combined with cold applications, produced little or no other effect than that of mitigating the acute pain in the head, between the convulsive paroxysms, which paroxysms became frequent. The patient having had no relief from the bowels, I deemed it advisable to mix six drops of croton oil with lard, in the form of a suppository, and so use it. This produced tenesmus, with a sense of smarting, burning heat in the lower bowel; but relief followed, and a copious watery evacuation almost immediately ensued. The patient had no more convulsions. Upon examination, I found no signs of on-coming labor, nor did the slightest chance of producing it present itself.

16th.—On my visit this morning, I found Mrs. R. calm, and free from convulsive symptoms; the anasarca had disappeared; micturition normal; bowels relieved (largely) four times; os uteri in the same state as before.

17th.—I found her dressed, and sitting by the fire in a lower room.

24th.—I was again sent for; and this time I found her in labor, the os uteri fully dilated, and the head presenting. Fearing a recurrence of the convulsions, I turned the child, and delivered her of a still-born, putrid child.

25th.—I found her quiet and comfortable, she had passed a good night, and from that period she went on well without one unfavorable symptom.

CASE 2.—*Puerperal Convulsions; recovery; subsequent death from swallowing a row of front false teeth.* February 18.—Anna F., aged twenty-two, a country servant, primipara, unmarried, six months advanced in pregnancy. The man to whom she was engaged to be married left the neighborhood, and married another woman. This event produced great despondency, and on her way home to see her mother, she was seized with convulsions about every ten minutes. At this time she lost four front teeth, fixed on a silver plate; they could not be found. She had swallowed them. I was sent for, and found her suffering from puerperal convulsions. Blood issued from her mouth; the tongue bitten severely; clonic spasms; head cool; pulse small and compressible; micturition scanty; bowels not open. Upon examination, I found the os uteri high up in the pelvis contracted. I introduced the catheter, and some urine came away. I then administered an enema of castor oil and ol. terebinth, and put 10 grs. of calomel on her tongue. I waited two hours; but no amendment was perceptible. I now ordered 8 drops of croton oil to be rubbed into some cerate, and so passed into the rectum. In a few minutes, she complained of great tenesmus and smarting pain in the bowels. Twelve large watery evacuations followed. No more convulsions. I enjoined perfect quiet, and left her.

19th.—Found her better in every respect. No return of convulsions; she complained only of some soreness in the throat; but there was no dyspnœa.

20th.—I was sent for in the night; natural labor was going rapidly on; a large quantity of liq. amnii was discharged, and in a short time she gave birth to a dead child.

21st.—A good night; no pain in the head; lochia natural; urine had been passed; pulse good; tongue moist, but injured during the convulsions. All went on remarkably well till the tenth day, when, as she was sitting up in the bed, drinking a cup of tea, and talking cheerfully with her mother, she suddenly called for a basin; vomited a large quantity of blood, sank back on her pillow, and expired.

The cause of death was evidently from the false teeth, or some portion of the metallic fastening, having penetrated some large vessel. No post-mortem inspection could be obtained.—(*Medical Times and Gazette*, April 23, 1859.)

2. PHYSIOLOGY AND TREATMENT OF PLACENTA PRÆVIA. By *Robert Barnes, M.D.*—The author sought to avail himself of the foundation of the Obstetrical Society of London to elict the experience of its members as to the different principles of treatment of placenta prævia. He submitted fourteen cases whic had come under his own care since the publication of his work on the subject; and appended two series of propositions—the one physiological, the other therapeutical—which appeared to be either proved or illustrated by those cases.

Among the physiological propositions were the following: That in many cases of placental presentation, there arrives a stage when the hemorrhage is spontaneously arrested. That this physiological arrest is not owing to pressure upon the bared surface of the uterus by the bag of liquor amnii, or the child; nor to death of the child; nor to syncope; nor to total detachment of the placenta. That this physiological arrest of the hemorrhage is observed when that part of the placenta which had been implanted within the cervical or lower zone of the uterus has been all detached, contraction of the uterus attending. That, this stage reached, there is no physiological or pathological reason why further detachment of placenta seated within the middle and fundal zones should occur until after the expulsion of the child, when, and not till then, the remainder of the placenta is cast off as in normal labor. That the position of the greater portion of the placenta to the posterior wall of the uterus in these cases, where it forms, by resting on the projecting promontory of the sacrum, a solid inclined plane, directed forward, is a frequent cause of the transverse presentations which are apt to complicate placenta prævia. That in the great majority of cases where an edge of the placenta comes down to the os internum uteri, the umbilical cord springs from this edge, and thus is ready to fall through into the vagina, should the os not be occluded by the child's head.

Among the therapeutical propositions were the following: That owing to the high vascularity and development of the lower segment of the uterus, resulting from this part being the seat of the placenta, uterine inflammation and puerperal fever are exceedingly likely to ensue from the pressure and contusion attending the passage of the child. That this danger is much increased by the forcible introduction of the hand for the purpose of turning and extracting the child before the os uteri has expanded. That in some cases, where it is observed that the placenta has been separated spontaneously from the lower segment of the uterus, the os being expanded to the size of a crown-piece, and the hemorrhage having ceased, it is not necessary to interfere with a labor now become natural *quoad* placental attachment. That since the os internum uteri must expand to the diameter of the child's head, and since, during the dilatation, placenta adhering to the lower segment is liable to successive detachment, causing hemorrhages, it is an indication to expedite this stage of the labor as much as possible. That in some cases the ordinary means of inducing contraction—such as rupturing the membranes, plugging the cervix, ergot or galvanism—will suffice to cause the rapid and safe expansion of the os. That the adhesion of placenta to the lower zone of the uterus impedes the regular progress of labor, and delays the equable expansion of the os uteri. That in those critical cases where forced delivery or the artificial total detachment of the placenta are dangerous or impracticable operations, the introduction of the index finger through the os, and the separation of the part of the placenta adhering to the cervical zone, is a safe and feasible operation.

Dr. Rigby would ask, was Levret's opinion as to the connection between partial implantation of the placenta over the cervix and prolapsus of the funis borne out by Dr. Barnes's experience? He would make one remark on a point which had, he believed, escaped notice. In cases of placenta prævia there now and then occurred danger from slight but continuous hemorrhage after delivery, in consequence of a small rent in the os, which at any other time would be of no consequence, but was of importance in these cases, owing to the extreme vascularity of the cervix.

Mr. Borham had found preternatural position of the child in five out of seven or eight cases of placenta prævia. He was at a loss to explain this. Was it connected with undue shortness of the cord?

Dr. Elkington believed no universal law could be laid down for treatment of these cases. When the placenta was partially implanted over the cervix, and the position of the child natural, he believed that rupture of the membranes and the use of ergot were sufficient. If the implantation was complete, the patient exhausted from loss of blood, etc., the proper treatment was to turn. His success had been greatest when turning had been performed early. He had always found the os easily dilatable when much hemorrhage had occurred, even though only as large as half a crown. He could not consider that the patient was secure from further hemorrhage after the placenta had been separated to a certain degree. He would be disposed to deliver as soon as possible.

Dr. Barnes, in reply, stated that in two of the cases of marginal presentation the cord was prolapsed. The cause of the preternatural position of the child in cases of placenta prævia was, as Levret long ago pointed out, the placenta prævia itself. He believed that in cross presentations generally, also, it would be found that the placenta was attached low down, and that this gave rise to the malposition of the child. He had found the os not dilatable in cases where much blood had been lost, although undoubtedly the opposite was the rule. He would submit that the "insecurity" to which Dr. Elkington had referred as hanging over a woman when the hemorrhage had spontaneously ceased, and the consequent necessity for further proceedings, was a feeling having its seat only in the mind of the accoucheur. He hoped to convert Dr. Elkington to a belief in the physiological views enunciated in the paper.—(*Medical Times and Gazette*, April 16, 1859.)

3. ON THE MORE FREQUENT USE OF THE FORCEPS AS A MEANS OF LESSENING BOTH MATERNAL AND FŒTAL MORTALITY. By *Philip H. Harper, F.R.C.S.*—The author first examined the question, What are the ill effects, either to the mother or child, produced by the forceps? and endeavored to show that not one of those usually ascribed to them could properly be attributed to the use of the instrument itself, but only to its abuse. It appeared, from various authorities, that the causes of maternal death after their use were the same as after unassisted tedious labor, and, therefore, that their origin must be sought in the delay, rather than in the use of the instrument; especially so long as it was only applied in the extreme cases of tedious labor. The causes of the large fœtal mortality were likewise to be found in the long-continued and violent efforts made by the uterus on the child previously to its application, and which are more fatal than the compression of the instrument in the proper direction. The cases of unassisted tedious labor, reported by Johnston and Sinclair, pointed to the fact that mere duration alone, without any abnormal circumstance, was a main element in rendering labor dangerous. Both the maternal and the fœtal mortality in their cases was greater in tedious labor than in their forceps cases. The maternal mortality in their craniotomy cases was greater than in either. Having spoken of the general powers of the instruments as extractors and rectifiers, Mr. Harper examined them as compressors, in order to discover how much compression might safely be exercised upon the fœtal head. He mentioned some experiments of his own upon children still-born after footling, and other such cases, where he applied forceps immediately after birth, and, fastening the handles together with India-rubber springs, had left them on for a time, with the effect of much altering the form of the head, and diminishing its diameter, without any apparent injury to the brain. These cases, of course, only bore slightly upon the question of compression previously to the child's death. The brain must be pressed in a direction parallel to the base of its anterior lobes, to pro-

duce the dangerous effects spoken of by Radford and others. In practice this was not really so easy as it was to apply the forceps so as to exert pressure upon the prominent parts of the frontal bone anteriorly, and the junction between the middle and lower thirds of the occipital bone posteriorly. When they were applied thus, and compression gradually exerted, the posterior mass of brain was lifted into the hollow of the forceps, while the anterior lobes were depressed; this movement being similar to the one adopted by nature in molding the head into the long oval shape. The author then spoke of the various states which may call for the use of the forceps, dwelling more particularly upon those dependent upon some such peculiarity existing in the uterus itself, such as rheumatism, spasm, irregular action of its fibres, irritability and debility, and which were very frequent causes of lingering and tedious labor. The period of the labor at which they should be applied was a very important question. It was not enough to show a small maternal mortality, but we must also have a small fœtal mortality. The second stage of labor ought to be steadily progressive, and if such be not the case, we ought to interfere. The element of time ought not to be considered. Careful study of the positions assumed by the child's head, while passing through the pelvis, and not subjected to forcing pains without progressing, showed that the earlier the forceps were applied, the more favorable was the position in which they compressed the head. The mother was unexhausted, flooding was avoided, the soft parts were uninjured, and the child was alive. In examining the various states in which their early use is advisable, the author dwelt especially upon inertia and sluggishness of the uterus. To rouse an overworked and overtasked organ to fresh exertion, was a very questionable proceeding. He brought forward statistics to show that ergot exerted a most deleterious action upon the fœtus. He had long ceased giving it under any circumstances previous to the birth of the child, but always used the short forceps instead, and with very great advantage both to mother and child. In cases of disproportion, which for any reason did not admit of turning, the forceps should be applied early, especially as there was nothing more dangerous than the head being impacted in any one position. In bringing forward various statistical tables to prove the proposition, that "the earlier and more frequently the forceps are applied in proper cases, the more maternal and fœtal lives are saved," he separated all arm, breech, footling, and placental presentations, together with their maternal and fœtal mortality. It was necessary, also, to separate puerperal fever cases and those in which death arose from other labor causes, or from constitutional causes coincident with the occurrence of labor. The necessity for thus dealing with the statistics, in order to arrive at a just conclusion, prevented his using all the obstetric histories which had been published, as they did not all contain these data. He examined Collins, Hardy, and McClintock, Johnston, and Sinclair, and his own statistics, and from them considered the proposition confirmed and proved.—(*British Medical Journal*, June 25, 1859.)

Editors' Table.

The following is an extract from a letter by the Senior Editor, dated Boston, the 14th of August:—

Yesterday I spent two hours at the Massachusetts General Hospital, Dr. J. Mason Warren having kindly called for me. While there I was introduced to Professor Henry J. Bigelow, Dr. Townsend, Dr. Cabot, Dr. Gay, and Dr. Clark, all officers of the institution. Dr. Gay extirpated a cancerous breast, in a state of ulceration, from a woman about forty-five years old, otherwise apparently in good health. He was followed by Dr. Clark, who amputated the thigh of a youth of twenty, on account of encephaloid disease of the lower part of the femur, first noticed last February. The operation was performed by the flap-method, by cutting from without inward. Next, Dr. Clark extirpated a testicle from a young man who had formerly had gonorrhœa. The organ began to enlarge a year ago, and was about the size of a goose egg. The upper part of the tumor fluctuated very distinctly, while the lower was very hard. The whole swelling had a uniform smooth appearance; the spermatic cord was sound, and there was no enlargement of the subcutaneous veins. A free incision being made, commencing near the external ring, a large quantity of water flowed out, leaving the testicle, hard and somewhat enlarged, exposed below. Upon consultation with one of his colleagues, Dr. Clark removed the organ, applying a stout ligature to the spermatic cord.

The next case was one of urinary calculus, a young man from the interior of Massachusetts, upon whom Professor Bigelow had already performed lithotropsy twice, the first operation having been executed just a week ago, and the second three days after that. The Heurteloup crusher having been introduced, the instrument was carried about in every direction, but failed to detect any fragments of stone.

All these patients were under the influence of ether, and the operations were performed with great neatness, although not very rapidly. The stone in Dr. Bigelow's case was one of triple phosphate, and the fact that he succeeded in getting rid of it at two sittings shows him to be an operator of no ordinary skill.

The amphitheatre of the hospital, planned by the late Professor Warren, is a very neat and pretty room, capable of seating about two hundred students, remarkably well lighted, and provided with a spacious area. Arranged along the wall of the room is a large open case filled with instruments, some of them deposited by the first Warren, and others by his son, who was so long Professor of Anatomy and Surgery in Harvard University, and one of the original surgeons of the hospital. Among other curiosities is a saw, invented by Dupuytren, for dividing the bone in amputation, and, at the same time, holding back the flaps. It was intended to obviate the necessity of assistants on the field of battle.

One of the most curious objects in the amphitheatre is an operating table, devised by Professor Henry J. Bigelow. It is altogether a remarkable piece of mechanism, so arranged by means of screws and hinges as to permit the patient, in a few seconds, to be placed in any position that may be most desirable. The original cost was $250, but I was told that it is now manufactured at about one-half that price. It certainly possesses great advantages, and no operating room should be without it.

The Massachusetts General Hospital contains about one hundred and forty beds, and is one of the neatest institutions of the kind in the world. It is well ventilated, and nothing could be more clean and orderly. The medical board consists of twelve members, six surgeons and six physicians, two of each of whom are on duty at the same time for a period of four months, the patients being assigned alternately as they are admitted. This arrangement greatly lightens the labors of the professional attendants, at the same time that it contributes very much to the welfare of the inmates.

Among the more interesting cases in the surgical ward were two of resection of the knee-joint; one of ununited fracture of the humerus, of twelve months standing, cured by Dr. Warren by the seton; and one of cancer of the lower lip, operated upon nearly a fortnight ago by Dr. Townsend, the lost substance having been replaced by Erichsen's method. One of the cases of resection of the knee, a young girl of about eighteen, was gradually sinking under purulent infiltration of the thigh, the swelling of which was enormous. This was the more surprising, as the operation had been performed nearly three months ago. The other case, that of a girl of thirteen, also operated upon twelve weeks ago, was doing well, with the prospect of a useful limb. Excision of the knee has now been performed five or six times at the hospital, with, in the main, a very gratifying result.

Close by the Massachusetts General Hospital stands the Medical Department of Harvard University, a small, unpretending edifice with admirable internal arrangements. The amphitheatre, the only lecture-room that I saw, is a beautiful little room, well lighted, and excellently adapted to the objects for which it is intended. Dr. Bigelow showed me the beautiful drawings with which he illustrates his courses of lectures in the college. They are of colossal size, splendidly colored, and the most graphic specimens of art of the kind that I have ever seen. They were made by a native American, under Dr. Bigelow's immediate superintendence, at a cost of from between $3000 and $4000.

Here, working, coat off, in a room by himself, I found my old friend, Dr. J. B. S. Jackson, the Professor of Pathological Anatomy, distinguished not less for his modesty and great kindness of heart than for the extent and variety of his attainments; the very pattern of an upright, useful, and industrious man, one of whom any school and any city might justly be proud. The lapse of twenty years, when I first saw him, has wrought a silvery change in his hair, but in all other respects he is the better man for his increased years. Having but little practice, he devotes himself almost exclusively to pathological pursuits, and there is no man, not even Rokitansky himself, who exhibits a greater interest in a morbid specimen.

The younger Warren—if a man who

has just become a grandfather may be so called—worthily represents the honor of his illustrious descent, being the third of his family who have shed lustre upon our profession, resembling in this respect the Meckels and the Monros. As already stated, Dr. J. Mason Warren, although not a professor, is connected with the Massachusetts General Hospital, and in the enjoyment of a large private surgical practice. The heir of a great name, he seems to be full of enthusiasm, and to spare no pains to extend his professional reputation. While at his house a few mornings since, he showed me the specimen of a case, which, forty years ago, attracted a vast deal of attention, from the respectability of the patient, the obscurity of the diagnosis, and the reputation of some of the medical witnesses, especially of the elder Warren, who made the case afterwards the subject of an elaborate paper addressed to the presiding judge, Chief Justice Parker. Dr. Warren diagnosticated the injury as a dislocation into the lower and outer part of the thyroid foramen, with a portion of the femur resting upon the tuberosity of the ischium; and the dissection made three months ago shows that his opinion was well founded, only that the bone lay more immediately in the thyroid foramen than he had been led to suppose, but into which, as his son conjectures, it might have been easily forced in the subsequent attempts at reduction. The attending surgeon, who had mistaken the case for one of fracture of the neck of the thigh-bone, was sued for malpractice, but was ultimately acquitted on account of the diversity of the views of the medical witnesses. The specimen, which was preserved at great trouble and expense, exhibits a new osseous socket, forming a complete wall for the head of the femur, nearly three inches in depth, and provided with several adventitious ligaments. The acetabulum is nearly entirely obliterated. The new joint admitted of useful motion.

Dr. Warren also showed me the skull and heart of the immortal Spurzheim, who died at Boston in 1832, and whose other remains lie at Mount Auburn, beneath a marble monument modeled after that of Scipio Africanus. It bears simply the name of the illustrious founder of phrenology. The skull of Spurzheim is well formed, but is not particularly large. The organ of veneration must have existed in a high degree, and amativeness was also quite large. The heart was of extraordinary size.

I could not, of course, pass through Boston without paying my respects to that good man and excellent physician, Dr. James Jackson, now upwards of eighty years of age, but still erect and vigorous, and full of animation. He received me with much cordiality, and, during the half hour which I spent with him, he alluded with great kindness to some of my colleagues, especially Professors Meigs and Dunglison, with both of whom he is personally acquainted. Notwithstanding his advanced age, this venerable physician is still able to attend to practice, his intellect and judgment being unimpaired and unclouded. Long may they remain so!

Dr. Hayward has just returned, after an absence of two years, from Europe, where he received much attention from his professional brethren. He looks healthy and vigorous, and bids fair to reach a ripe old age. There are few men in the United States who have reflected greater credit upon American surgery than he. Although he has not published much, yet whatever he has written has been eminently judicious and useful. He retired from practice a few years ago, in the enjoyment of honor and wealth.

MEDICAL HEROISM.—Such is the title of an address delivered by Dr. John Bell, before the Philadelphia County Medical Society, on retiring from the office of President. It is characterized by great learning, as are all the productions of this distinguished author; and is one of the most interesting discourses which it has ever fallen to our lot to read. We do not recollect ever before to have seen the subject of medical heroism discussed with half so much ability. Our limits will permit only one extract:—

"The name of Howard is everywhere celebrated, and praised in terms of warm gratitude, as the reformer of prison abuses and prison cruelties. It has obtained a place in the history of the world's progress. The name of Pinel is not, I am afraid, familiar even to the medical world; and it is still less to the world at large, as that of a physician, who, both by personal services and earnest teaching, brought about a reform in the management and discipline of asylums for the insane, which may now be properly regarded one of the strongest proofs of advanced civilization. If a proper sympathy and sentiment for humanity and justice have been enlisted by the benevolent Englishman, in what light ought we to regard the services of the equally benevolent Frenchman, who reminded men of their duties to the Providence stricken, but irresponsible insane? Excuse might be found for vindictive harshness to the criminal who has made war on society; but where is the extenuation for more deliberate cruelty, practiced so long and so generally on those unfortunate beings, bereft of their reason, many of whom, but a short time before, had been the delight of the social circle, and cherished members of the family?

"When we think of the old Bedlams and hospitals for the insane, in which not only the raving maniac, but the melancholy monomaniac was confined, and in which the only sounds were those of the clanging chain, the echoing lash, and the mingled cries and vociferations of the brutal keepers and infuriated inmates; and then look abroad over the better portions of the civilized world, including our own favored land, and see the many noble edifices erected for the reception and treatment of this class of unfortunate fellow-beings, we feel that we live in an age not only of progress, but of real improvement; one in which humanizing influences are more active and diffused than they ever were before. The contrast between the present and the past in this particular, while it should prompt all to the liveliest manifestations of gratitude, ought, undoubtedly, to find a place in general history, in which proper credit would be awarded to our profession, so many members of which have imitated, in their official position as superintendents of insane asylums, the noble example set by Pinel at the Bicêtre and the Salpétrière.

"That was indeed a critical moment in the life of Pinel, and in the history of benevolent trials for the mitigation of human suffering, when he resolved to test the correctness of his principles of non-restraint, by holding direct personal intercourse with a violent maniac, whose chains and fetters he had previously directed to be removed. The trial was entirely successful.

After an eager gaze and a movement, as if preparatory to a tiger-like spring on his visitor, who had just entered his cell, the unfortunate being saw eyes beaming with kindness and placid features, expressing benignity and good-will. Soon his own countenance underwent a change; the mere brute was once again a human being; and when the tones of affectionate inquiry reached his ear, and the hand of greeting was extended toward him, he could only answer and reciprocate by shedding tears, the fountains of which had long been dried up by the fiery furnace of maddened feelings, wrought to fury by angry menace and brutal punishment. From this moment the cure of the poor maniac, which had been before regarded as hopeless, was begun, and terminated in entire restoration to health and reason."

MEDICAL PRIZES.—The subjects for the Jacksonian Prizes, as announced for the year 1860 by the Council of the College of Surgeons, are, "The Healthy and Morbid Anatomy of the Prostate Gland," and "A Description of the Diseased Conditions of the Knee-joint which require Amputation of the Limb, and of those Conditions which are Favorable for Excision of the Joint, with an Explanation of the Relative Advantages of both Operations, so far as can be ascertained by Cases properly authenticated."

M. Lombard, President of the Medical Society of Geneva, has announced that the Society will award, in 1860, a prize of two hundred dollars, and a second prize of one hundred dollars, to the authors of the two best papers on smallpox, varioloid, varicella, vaccinia, and re-vaccinations.

A prize of sixty dollars is offered by the Imperial Society of Medicine of Bordeaux, for the best essay on the "Prophylaxis of Consumption."

For the best memoir on the "Value of Caustics in the Treatment of Cancer," the Medical Society of Toulouse offers a prize of sixty dollars; the prize for 1861 will be for an essay on "The Influence of Cultivation upon Plants employed in Medicine."

The Medico-Chirurgical Academy of Ferrara will award a prize of two hundred Roman crowns, in 1862, for the best essay on "Mental Diseases in their Relation to Legal Medicine."

The subject for the prize of one hundred Roman crowns, offered by the Medico-Chirurgical Society of Bologna, is "Suckling, Considered in Relation to the Diseases of the Nurse and the Infant."

The Trustees of the Fiske Fund announce for 1860 two prizes, of one hundred dollars each, for the best papers on the following subjects: "Diphtheria; its Nature and Treatment, with an Account of the History of its Prevalence in Different Countries;" and "The Morbid Effects of Retention in the Blood of the Elements of the Urinary Secretion."

MEDICAL JOURNALS.—We have received the second number of the *Cleveland Medical Gazette*, a new monthly periodical, edited by Dr. G. C. E. Weber, Professor of Surgery in the Cleveland Medical College. We place it on our exchange list with pleasure, and would thank the editor for the first number.

Dr. T. S. Sullivan has retired from the editorship of the *Savannah Journal of Medicine* which will in future be conducted by Dr. Juriah Harriss and Dr. R. D. Arnold.

Dr. Currey having withdrawn from

the *Nashville Monthly Record,* it will hereafter be edited by Professor Wright, assisted by Professors Callender and Maddin.

The Dental News Letter, an able quarterly, will from the first of August be issued as a monthly, under its new name of "*The Dental Cosmos*." Dr. McCurdy dissolves his connection with it, and its editorial management will be supervised by Dr. J. D. White, Dr. J. H. McQuillen, and Dr. G. J. Ziegler. From the well-known qualifications of the editors, we predict for it much success.

We have received from Messrs. Sutherland and Knox the fourth number of the *Edinburgh Veterinary Review and Annals of Comparative Physiology.* From the names of its contributors, and the style and value of its articles, we cannot for an instant doubt that it will be warmly received by all those interested in this department. The publishers will oblige us by sending the back numbers.

CHANGES IN MEDICAL SCHOOLS.—In the Medical College of Ohio, Dr. J. Wood has resigned his chair, and two new professorships have been instituted in its stead. That of Clinical Medicine has been filled by the appointment of Professor Graham, and Dr. B. F. Richardson fills that of Diseases of Women and Children.

The vacancies in the New York Medical College have been filled by the transfer of Dr. Peaslee to the Chair of Obstetrics, and by the appointment of Dr. Austin Flint, Jr., to the Professorship of Physiology and Microscopical Anatomy. Dr. James Bryan occupies the Chair of Anatomy, and Dr. Meier that of Surgical Anatomy and General Pathology.

In the Shelby Medical College, Dr. Henry Erni succeeds Dr. Currey in the Chair of Chemistry.

Dr. John E. Crowe has been appointed Demonstrator of Anatomy in the Medical Department of the University of Louisville; and Dr. Demmé fills the same post in the Pennsylvania Medical College.

The Faculty of Medicine of Paris recently presented the following candidates for the Chairs of Physiology and Pharmacy. For the former, Drs. Longet and Béclard, and for the latter, MM. Régnault, Leconte, and Orfila.

The successful candidates were MM. Longet and Régnault.

PHILADELPHIA HOSPITAL, BLOCKLEY.—The office of Chief Resident Physician to this institution having been abolished, the Board of Guardians, at their meeting on the eighth of August, elected the following gentlemen as Visiting Physicians, Surgeons, and Obstetricians:—

Physicians.—Drs. J. L. Ludlow, W. Mayburry, C. P. Tutt, and F. E. Luckett.

Surgeons.—Drs. R. J. Levis, D. H. Agnew, S. D. Gross, and R. S. Kenderdine.

Obstetricians.—Drs. R. A. F. Penrose, L. D. Harlow, W. D. Stroud, and J. Wiltbank.

VACANCIES AND APPOINTMENTS IN LONDON.—Dr. Carpenter is about to resign the Professorship of Medical Jurisprudence in University College, and the chair will be filled by Dr. Harley.

The death of Dr. Samuel Griffith has rendered vacant the post of Physician-Accoucher, and Lecturer on Clinical Midwifery, to St. Thomas's Hospital.

The Chairs of Human Anatomy and Surgery, and Comparative Anatomy and Physiology, in the Royal College of Surgeons, are rendered vacant by the resignation of Professors Hewett and Busk.

STATE MEDICAL SOCIETY OF IOWA.—This body met at Davenport, on the seventh, eighth, and ninth of June, the attendance being larger than on any previous occasion, about fifty members, representing fifteen counties, being present. The retiring President, Dr. John H. Rauch, who has been called to fill the Chair of Materia Medica in a Chicago medical college, delivered a very eloquent address, a copy of which was requested for publication. A number of important papers were read, among which we may mention the elaborate report of Dr. Rauch, on the Topography, Natural History, and Climate of Iowa; and an essay on the Medical Properties of the Chlorate of Potassa, by Dr. E. J. Fountain. The following gentlemen were elected officers of the Society for the ensuing year:—*President*, Dr. E. S. Barrows; *Vice-President*, Dr. G. Reeder; *Recording Secretary*, Dr. A. Phillips; *Corresponding Secretary*, Dr. Oliver George; *Treasurer*, Dr. M. B. Cochran; *Censors*, Drs. Fountain, McGugin, Lewis, McClure, and Dimmitt. The meeting was exceedingly pleasant and harmonious, and the Society adjourned to meet at Dubuque on the second Wednesday of May, 1860.

THE MEDICAL COLLEGE OF ALABAMA.—In our May number we announced that a new school was about being organized at Mobile, and since that time we have received the circular of the institution, from which we learn that the Chairs have been filled by the appointment of the following gentlemen: Dr. J. C. Nott, Surgery; Dr. J. F. Heustis, Anatomy; Dr. W. H. Anderson, Physiology and Pathology; Dr. G. A. Ketchum, Practice of Medicine; Dr. F. A. Ross, Materia Medica and Therapeutics; Dr. F. E. Gordon, Obstetrics and Diseases of Women and Children; Dr. W. J. Taylor, Chemistry; and Dr. G. Owen, Demonstrator of Anatomy. But five American works are recommended as text-books.

ELECTRICITY AS AN ANÆSTHETIC.—A great deal has recently been written in regard to the application of electricity to the extraction of teeth, but it does not seem to realize the hopes of its introducers, and has by no means proved a success as an anæsthetic. The Pennsylvania Association of Surgeon-Dentists and the St. Louis Dental Society have each appointed committees to test its value, and their reports confirm each other, that in a very few cases the operation was said to be entirely painless; while in the great majority of instances the pain was slightly relieved, or not at all, and occasionally it was increased. A committee of the College of Dentists of London, in a recent report, stated that the results were decidedly negative, and that in no instance was local anæsthesia produced. In a scientific point of view, it, therefore, condemned the employment of the electrical current as a means of diminishing pain in dental operations.

HINDOO LITHOTOMY.—The following lucid description, says the *Dublin Medical Press*, quoting from Hessler's

Hindoo Medicine, of the operation, (probably written one thousand years before our era) which was well adapted to the spare habits of the Asiatic, has a marked resemblance to that described by Celsus, who may have obtained it from the East, and has since been well known as cutting on the "gripe," and is interesting from being the most ancient on record:—"The surgeon is to press the calculus downward, by rubbing the abdomen with his right hand, while the middle and index fingers of his left, with the nails cut short, and well oiled, are inserted into the rectum. With well-regulated force the calculus is to be pushed downward, until it forms a swelling on the left side of the perineum, when it is to be cut open and removed. The surgeon must take care to remove the calculus entire; and with this object, a scoop is to be used, when it is soft, as when a small portion is left, it will slowly form another."

BARON HIPPOLYTE LARREY.—The son of the distinguished Larrey held, in the recent campaign in Italy, the important post of Director-General of the Army Medical Department in Italy, the same position occupied by his father under Napoleon I. At the battle of Solferino he evinced much boldness and bravery, and had a horse shot under him. Prior to entering upon the campaign, he presented the house in which his father was born to the Parish of Baudéan, and founded an asylum and school for the children of the parish, which he endows with a hundred dollars yearly.

STATUE TO JENNER.—The French nation, by a public subscription, have recently erected a statue in bronze, in front of the Louvre, Paris, to Jenner, the work of M. Eugéne Paul.

NEEDLE FOR METALLIC SUTURES.—Dr. Paul Goddard has recently devised a very simple and ingenious needle, which will be found to answer every purpose in the introduction of metallic sutures, thus obviating the necessity of twisting the wire, which renders its passage difficult.

The point of the needle is slightly curved and spear-shaped; its head is perforated at its centre with a hole of such a size as will accommodate the wire, and very near the head is an oblong eye, larger than in the ordinary needle. The wire is passed through the hole, coming out at the eye, and its extremity, doubled upon itself, is drawn back into the eye, thereby concealing the bent portion. The wire thus moves in the same line as the needle, and is passed without that jerking and pulling necessary when the ordinary needle is used. It can be obtained from Mr. Gemrig.

NEW WORKS.—Messrs. Blanchard & Lea have in the press, and will issue early in the autumn, Professor Austin Flint's treatise on the Diseases of the Heart; Professor Hamilton's work on Fractures; and Professor Stillé's treatise on Materia Medica and Therapeutics—the latter in two large octavo volumes. Dr. Da Costa's work on Diagnosis is in the press of Messrs. J. B. Lippincott & Co., and will appear in the course of the winter.

MEDICAL APPOINTMENTS IN BERLIN.—M. Frerichs, of Breslau, has been appointed to the Chair of Clinical Medicine, which has been vacated by M. Schönlein, after having filled it with distinguished ability for twenty years. M. Frerichs is well known by his researches on Bright's disease, and by his able work on the diseases of the liver, but half of which has appeared.

City Hospital of Chicago.—This new hospital has been completed, and the staff of surgeons and physicians consists of the following gentlemen:—

Surgeons.—Drs. Brainard, Amerman, and Schloetzler.

Physicians.—Drs. Miller, Blake, and Ross.

City Hospital of Philadelphia.—Dr. John Bell has been appointed, by the new Board of Health, Physician to this institution.

NECROLOGICAL NOTICES.

Dr. Samuel Griffith.—This young and estimable physician died at Devon, on the 23d of June, in the thirty-fourth year of his age. Enjoying one of the largest practices in the diseases of females, he overtasked his constitution, which brought on disease of the lungs, eighteen months prior to his death. Dr. Griffith was a zealous student, and at the time of his decease he occupied many important positions, among which was that of Physician-Accoucheur, and Lecturer on Clinical Midwifery, to St. Thomas's Hospital.

Dr. Thomas M. Winterbottom died on the 8th of July, from peritonitis and intestinal obstruction, in the ninety-fourth year of his age. Early in his life he held the position of Physician to the Colony of Sierra Leone, and afterwards wrote a work entitled "An Account of the Native Africans in the Neighborhood of Sierra Leone." He was not an extensive writer, but contributed some articles to the Edinburgh Medical and Surgical Journal. His fortune, amounting to over one hundred thousand dollars, has been left to trustees, for the establishment of a marine school for the education of seafaring men in the higher branches of navigation.

Jacob Bell, Esq., expired of laryngeal phthisis, on the 8th of June, at Tunbridge Wells, in the forty-ninth year of his age. At the time of his death he was the President of the Pharmaceutical Society of London, and editor of the Pharmaceutical Journal, both of which owe, in a great measure, their rise and progress to his exertions. His loss will be deeply felt by the chemists and pharmaceutists of England.

Dr. William J. Tuck, a native of Virginia, died at Memphis, of gastro-enteritis, on the 8th of June, in the forty-fifth year of his age. He was a graduate of the University of Pennsylvania; and during the past session held the position of Professor of the Institutes of Medicine in the Memphis Medical College.

Sir Philip Crampton, Bart., one of the first surgeons Ireland ever produced, died in the eighty-second year of his age, in Dublin, on the 10th of June. Early in life he served as assistant surgeon in the military branch, but soon being appointed surgeon to the Meath Hospital, he settled in Dublin in the practice of his profession, and also became engaged in teaching anatomy. He was as judicious a physician as he was a distinguished surgeon, and devoted much attention to the study of zoology and comparative anatomy. His public positions at different periods of his life were very numerous, having three times filled the chair of President of the Royal College of Surgeons in Ireland, besides many other important posts. At the time of his death he was Surgeon-General to the Forces in Ireland.

DR. DANIEL PRIORY, a physician of much eminence, died of paralysis, at Taunton, on the third of July, in the seventieth year of his age. On account of ill health, he had not practiced his profession for the last twenty years. His contributions to medical literature were voluminous. His first work was published in 1813, under the title of an "Essay on the Absorbents, Comprising some Observations upon the Relative Pathologies and Functions of the Absorbent and Secreting Systems." Two years later, his treatise entitled "A View of the Relations of the Nervous System in Health and Disease" appeared, for which he had gained the Jacksonian Prize. His other works were, "General Indications which Relate to the Laws of Organic Life;" "An exposition of the Principles of Pathology and the Treatment of Diseases;" and "Sketches of Intellectual and Moral Relations." Dr. Priory also contributed largely to medical and scientific journals, and left behind him a large mass of manuscript, which, in a letter to his executor, was ordered to be burned.

Bi-Monthly Bibliographical Record.

AMERICAN.

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Woman; her Diseases and Remedies. A Series of Letters to his Class. By Charles D. Meigs, M.D., Professor of Midwifery and the Diseases of Women and Children in the Jefferson Medical College of Philadelphia, etc. 4th edition. 8vo., pp. 706. Blanchard & Lea: Philadelphia, 1859. (From the publishers.)

The Virginia Springs, and Springs of the South and West. By T. J. Moorman, M.D., etc. 12mo., pp. 403. J. B. Lippincott & Co.: Philadelphia, 1859. (From the publishers.)

Contributions to Midwifery, and Diseases of Women and Children, with a Report on the Progress of Obstetrics, and Uterine and Infantile Pathology in 1858. By E. Noeggerath, M.D., and A. Jacobi, M.D. 8vo., pp. 466. New York: Ballière Brothers, 1859. (From the authors.)

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Proceedings of the Sixty-Seventh Annual Convention of the Connecticut Medical Society, held at Middletown, May 25th and 26th, 1859. 8vo., pp. 106. (From the secretary.)

Medical Heroism. Address delivered before the Philadelphia County Medical Society, February 24th, 1859. By John Bell, M.D. 8vo., pamphlet, pp. 38. (From the author.)

Some Account of a Secret Society in New York, entitled the "Kappa-Lambda." In a letter to Alexander Stevens, M.D., by a Retiring Physician. Pamphlet, 8vo., pp. 37. 1859. (From the author.)

Medical Communications of the Massachusetts Medical Society. Vol. ix. No. 5. 8vo., pp. 130. Boston, 1859. (From the Society.)

Reminiscences of Samuel Latham Mitchill, M.D., LL.D. By John W. Francis, M.D., etc. Pamphlet, 8vo., pp. 31. New York, 1859. (From the author.)

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The Present State of Microscopical Science, Medically Considered. By John H. Packard, M.D. Reprint. 8vo., pp. 43. Philadelphia: J. B. Lippincott & Co., 1859. (From the author.)

On Recto-Vesical Lithotomy, with the Report of Cases in which this Method was successfully employed. By Louis Bauer, M.D., etc. Reprint, pp. 14. New York, 1859. (From the author.)

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Case of Hermaphrodism. By J. Mason Warren, M.D. Reprint, pp. 6. Philadelphia, 1859. (From the author.)

The Brooklyn City Hospital in 1858, and the Address. By T. C. Hutchinson, M.D., etc. Pamphlet, 8vo., pp. 38. Brooklyn, 1859. (From the author.)

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FOREIGN.

The Action of Medicines in the System. By Frederick William Headland, M.D., etc. 3d edition. 8vo., pp. 463. Philadelphia: Lindsay & Blakiston, 1859. (From the publishers.)

Urinary Deposits; their Diagnosis, Pathology, and Therapeutical Indications. By Golding Bird, M.D., etc. Edited by Edmund Birkett, M.D., etc. A New American, from the Fifth London Edition. 8vo. pp. 382. Philadelphia: Blanchard & Lea, 1859. (From the publishers.)

A History of the Discovery of the Circulation of the Blood. By P. Flourens. Translated from the French by J. C. Reeve, M.D., etc. pp. 175. Cincinnati: Rickey, Mallory & Co., 1859.

The Treatment of Ulcers and Cutaneous Eruptions on the Leg, without Confinement. By Henry T. Chapman, F.R.S., etc. 3d edition. Post 8vo., pp. 161. London: Churchill, 1859.

The Pathology of Tuberculous Bone. By C. Black, M.D., etc. pp. 40. Edinburgh: Sutherland & Knox, 1859.

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Lectures on Pathological Anatomy, etc. By Samuel Wilks, M.D., etc. 8vo., pp. 480. London: Longman, Brown & Co., 1859.

Epiphora, or Watery Eye; its Successful Treatment by the New Method of Dilatation. By James Vose Solomon, F.R.C.S., etc. 8vo. London: Churchill, 1859.

On the Treatment of the Epidemic Cholera. By Joseph Ayre, M.D. 8vo. London: Churchill, 1859.

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Medical Sketches in Austria, Prussia, and Italy. By James G. Hildige, F.R.C.S.I., etc. pp. 86. Dublin: Fannin & Co., 1859.

THE

NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

NOVEMBER, 1859.

Analytical and Critical Reviews.

ART. I.—*Manuel Complet de Médecine Légale, ou Résumé des Meilleurs Ouvrages Publiés jusqu'a ce Jour sur cette Matiere, et des Jugements et Arrets les plus Recents.** Par J. BRIAND, D.M., de Paris, ex-Professeur d'Anatomie de Médecine et de Chirurgie; et ERNEST CHAUDÉ, Docteur en droit, Avocat de la Cour d'Appel de Paris; Contenant un Traité Elementaire de Chimie Légale, dans lequel est discuté la Marche à suivre dans les Recherches Toxicologiques et dans les Applications de la Chimie aux Diverses Questions Criminelles Civiles, Commerciales et Adminstratives. Par H. GAULTIER DE CLAUBRY, Docteur en Science, Professeur à l'Ècole Superieur de Pharmacie, Officier de la Legion d'Honneur, etc. etc. Sixième edition. Avec 3 Planches gravées et 64 Figures dans le Texte. Paris: J. B. Baillière et Fils, 1858; pp. 948, 8vo.

A Complete Manual of Legal Medicine; or, a Digest of the Best Works Published up to the Present Time on the Subject, and the most Recent Decisions and Decrees. By J. BRIAND, M.D., etc., and ERNEST CHAUDÉ, Counselor-at-law and Advocate in the Court of Appeals, Paris: Including an Elementary System of Legal Chemistry, etc. etc. By GAULTIER DE CLAUBRY, Doctor in Science, and Member of the Legion of Honor, etc. Paris: Baillière & Son, 1858.

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* There follows on the title-page: "Precedé de considerations sur la recherche et les poursuites des crimes et des delits, sur les autorités qui ont droit de requérir l'assistance des médecins ou chirurgiens, sur la distinction etablie par lui entre les docteurs et les officiers de santé, sur la maniere de proceder aux expertises medico-legales, sur la relation des rapports et des consultations, sur les cas ou les hommes de l'art sont responsibles des faits de leur pratique, et sur les honoraires qui leur sont dus, soit en justice, soit dans la pratique civile; et suivi de modeles de rapports et de commentaires sur les lois, decrets et ordonnances qui regissent la médecine, la pharmacie, la vente des remèdes secrets," etc.

THIS "Manual" is the latest, and may in some respects be regarded as the best among the systematic treatises which have appeared in France during the last half century, on the science, known in the United States and England under the title of Medical Jurisprudence, and on the continent of Europe under that of Legal Medicine, and, occasionally, as Forensic, State, or Juridical Medicine. The sight of a portly tome of nearly a thousand pages octavo, composed and ushered into public notice by its well-known author in chief, and his two aids in law and chemistry, may well bespeak our respect, and create a desire for intimacy with its contents, ample and diversified as they are. We must, at the same time, confess that we cannot refrain from looking with a feeling akin to veneration at a ponderous folio of upwards of twelve hundred pages, black letter, which is no less a work than that of the celebrated *Questiones Medico-Legales* of Paulus Zacchias, and which, in its antique parchment binding, is now lying on our table, alongside of the somewhat undressed modern one of M. Briand, with its rough sides and paper cover. Our design in thus introducing with so little ceremony the Roman work of 1621 and the Parisian of 1858 to our readers is, that we may with the better grace tell them of some passages in the history of medical jurisprudence, the scientific or clearly speaking age of which is very nearly included between these two dates. The continual neglect of the subject in most of our medical and law schools, so far at least as a failure to teach it with any approach to method or fullness, renders it imperative on reviewers and journalists to lose no opportunity to give their aid in supplying the omission.

Medical Jurisprudence has been variously defined. We would call it, that science which teaches the application of every branch of medicine to the elucidation of questions of law and right, which come before the regular tribunals of the country for adjudication. We see no good reason for including under the head of Medical Jurisprudence the subjects of Public Hygiene and of Medical Police, on the ground that the two last are regulated by laws, in the framing of which a knowledge of medical science is of paramount importance. The enactments for their observance are precise, as is the penalty for a breach of them; and although in some cases, as nuisances, for example, they seem to make a near approach to the domain of medical jurisprudence, yet the objects aimed at and the results reached are, in the main, widely different, the one from the other. In giving this opinion, we are in opposition to such authorities as Foderé, and Paris and Fonblanque, the two latter of whom representing each respectively, medicine and law, united their lore and experience in composing a work on medical jurisprudence, in which they treat, also, of the public health and medical police; but we have at the same time, the majority of medico-juridical writers on our side.

Medical jurisprudence is a science of modern origin, for we can hardly speak of its separate existence before the beginning of the fourteenth century, when anatomy was first studied on the human subject, nor of its acquiring distinct outlines before the sixteenth century, by the publication, in 1532, of the *Carolinian Criminal Constitution** of the Emperor Charles V. Not only did articles 147 and 148 formally admit the indispensable necessity of medicine in aid of medical jurisprudence, but many other articles also, in apportioning to a certain extent the punishments to the physical effects of crimes, imply of course a rigorous appreciation of these effects. They who are disposed to enter into the literature of the subject, may consult the book of Deuteronomy, chapter xxii. verse 15, and the *Lex Aquilia* of the Romans, and enactments on certain points—such as legitimacy, abortion, the relative fatality of wounds, etc., extending from the reign of Numa Pompilius to the times of the emperors Severus, Antoninus, Adrian, and Aurelius; the edicts of these latter being based on the writings of Hippocrates, Aristotle, and Galen. By the Aquilian law, it was decreed, that if a slave have been wounded, but without the wound being necessarily mortal, and that death takes place through negligent treatment, an action can only lie for the wound and not for the death. The case here supposed, is that of a simple wound without premeditation, and not one coming under the charge of assassination. Of the ancient writers, Galen is the only one whose works furnish some materials for legal medicine. We may mention more particularly his treatise on "Feigned Diseases," and his remarks on the lungs of the fœtus and of the adult, remarks which must be regarded as the first data toward pulmonary docimasy, or the hydrostatic test. A nearer approach to system than could be obtained from these scattered fragments, seemed to be made by the Justinian code, in which are found regulations respecting marriage, the duration of pregnancy, supposititious children, impotence, etc.

The influence of Roman law was not lost on the rulers who governed in Western Europe after the downfall of the empire; and accordingly we find Charlemagne, in his *Capitularies*, requiring, under specified circumstances, the intervention of medical men, and directing in a forcible manner, as Justinian had previously done, the appearance of regular medical experts before the tribunals. In the long night of intellectual darkness which followed the death of this sovereign, medical jurisprudence, in common with all the sciences and literature, was lost sight of; and its appearance with distinctive attributes must be referred to the period already indicated, which was that of the real study of anatomy. The first methodical work on our science is due to the eminent French military surgeon, Ambrose Paré, whose presence in the army was deemed equivalent to a reinforcement of many thousand men. His work, dated 1575, is on "Reports:" in it the author speaks of feigned diseases. In the last part of this century, and in the beginning of the next, medical jurisprudence made decided progress, both in France and Germany. It was indeed time that medical science should enlighten legislation, and interpose between the cruelty of the law and its innocent victims. Pigray, surgeon to Henry III. of France, and a contemporary of Ambrose Paré, relates a case brought before the parliament of Paris, which, at the time (1589) was sitting in Tours. Pigray, in association with three physicians of the king, went to visit fourteen persons, men and women, who had made an appeal from a decree of death for the crime of sorcery. The reporters state that they made the desired examination into the bodily and mental condition of these unfortunate creatures; some of whom were averse to dying, and others desired it. The opinion of the medical jurists in this case, was to ply them with hellebore in order to purge them rather than subject them to any process of a penal character. It is an evidence of the limited view which then prevailed of the attributes of medical jurisprudence, that both by Henry IV. and Louis XIV., a surgeon alone was appointed in each town and populous district, to make a report on the killed, wounded, or otherwise mutilated. The appointment rested with the chief physician of the king, and was often made to favorites or venal applicants, without regard to qualifications. In 1611 appeared the Discourse of Vincent Tagereau, on Impotence in Man and in Woman, in which the author insists on the indecency as well as the insufficiency of the congress, (*congressus,*) or the test of coition between husband and wife, in the presence of a designated number of surgeons and matrons; for such was the law when an application was made, on either side, to dissolve the marriage tie, on the plea of impotence. This odious exhibition, alike adverse to morality and physiology, was not abolished by law until the year 1667. One of the earliest works on a subject of medical jurisprudence in Germany, was published at the very close of the sixteenth century, (1599.) Its title, *De Cruentatione cadaverum injusta cæde*

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* "*Constitutio Criminalis Carolina*, which still forms the basis of the criminal proceedings of the German law courts. In the Code, it is enacted that medical men shall be consulted whenever death has been occasioned by violent means, whether criminal or accidental, by wounds, poison, hanging, drowning, or the like, as well as in cases of concealed pregnancy, procured abortion, or child-murder," etc.—PARIS AND FONBLANQUE, *Medical Jurisprudence*, vol. i. p. 10: Introduction.

factorum præsente qui occidisse creditur, sufficiently indicates its real value; the author, Andrew Libavius, upholding the absurd belief that the wounds of the dead man will bleed when the murderer is present. If it were true that the state of a science in any country should be measured by the literary labors to which it has given rise, Sicily must be regarded as the mother-land of medical jurisprudence, since it was at Palermo, in 1602, that Fortunatus Fidelis—what a name of happy omen!—collected and published the first treatise on nearly all that was then known of the medico-legal doctrines of his time. His work, *De Relationibus Medicorum*, consists of four books, the first of which is on subjects of hygiene. We notice, with a passing remark on the waste of mind and learning displayed in it, the voluminous production of Buonaventura, entitled *De Natura partus octomestris, adversus vulgarem opinionem.* This is a folio volume containing upwards of one thousand pages, devoted to the topic of eight months pregnancy, with an account of all the discussions that have arisen on the legitimate period of utero-gestation.

About twenty years after the publication of the treatise of Fidelis appeared the more celebrated and still esteemed Medico-Legal Questions* of Paolo Zacchia, or, as he is more usually called by his Latinized name, Paulus Zacchias, a Roman of a noble family, who was versed in literature, and withal a poet, a painter, and a musician. To Zacchias must be awarded the credit of being the first to exhibit medical jurisprudence as a science; and we should hardly find fault with the teacher whose retrospective lore did not not carry him beyond the date of publication of the *Questiones Medico-Legales.* A copy of the Frankfort edition, 1688, now before us, bears on a fly-leaf the title of *Questionum Medico-Legalium Opus Absolutissimum in Tres Tomos Divisum.* It is a ponderous folio, bound in parchment, and consists of upwards of twelve hundred pages, in three volumes. The work, apart from its intrinsic merits, is a literary curiosity by the prefixes, interpolations, and other additions of its editor, *Georgius Francus*, whose lavish praises of the author are exceeded by those of which he is himself the subject, on the part of admiring friends and correspondents. Some of our medical critics would be disposed to temper the severity of their censures of American physicians who edit English works, were they to look over the title-page, preface, and other preliminary articles on the Medico-Legal Questions of Zacchias, introduced by their Heidelberg brother. We subjoin in a foot-note the contents of the title-page,* as found in the original. The artistical effect on the eyes of our readers must of course be lost, from our inability to give the variety of type and alternate black and red letters which embellish the page. Notwithstanding so stately a presentation and so formal a dress, the literary magnificos did not deem it beneath them to speak of the work being so very necessary (*plus maxime necessarium*) to the skilled in law and medicine, as well as to those holding seats in the ecclesiastical courts, in terms which, now-a-days, the publisher is content to append in the shape of an advertisement. After the title follows a dedication to the Prince Elector Palatine, and on a third leaf is an address setting forth the merits and deeds of the Prince and his family. Next we come to the preface, written also by Georgius Francus, who, after the example of James Dumascene, compares medicine to the ocean; hygeia reminding us, why one cannot say, of the Atlantic; therapeutics of the Indian Ocean; and so on. And, again, the art of medicine is compared to a ship, of which reason is the prow—one would have said rather the rudder—experience the poop, surgery the oars. By another of these *concetti*, the four cardinal points were made to represent the four sects in medicine, viz.: the dogmatics, the empirics, the methodists, and the hermetics, or alchemists.†

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* Questiones Medico-Legales, in quibus omnes materiæ medicæ quas ad legales facultates videntur pertenere, proponuntur, pertractantur, resolvuntur. Libri ix. The first of these books, or, as they would perhaps be now called, fasciculi, was published in Rome in 1621. The eighth and the ninth book appeared in 1650.

Editions of Zacchias had appeared first in Rome, and then in Leipsic, Amsterdam, Leyden, and finally Frankfort, the last edited by Horstius. Bencard, the publisher, wishing to bring out a new edition, to be enriched with commentaries by jurists, as well as by physicians, applied to Frank, who forthwith set about enlisting the aid of men eminent in law and medicine. Their names are recorded and their merits duly emblazoned. We shall not repeat the enumeration nor the specifications of the different chapters of the work, to which they added notes and commentaries. They are all mentioned in the preface, and constitute a list of (*præclarissimi, celeberrimi, honoratissimi, præstantissimi*) men who have left behind them no enduring marks, unless we except the matter which adheres to the original work of Zacchias himself. Every age furnishes a similar lesson of rebuke to vanity and ambitious aspirations. While we receive its teachings, we must not, however, be deterred from continually exerting ourselves in the path of improvement. The exercise is a salutary one, even though it may not lead to the temple of fame. But not alone were the volunteer literati of the day enlisted by Francus, the most erudite of editors—he presses into the service of legal medicine all the philosophers, all the poets, historians, satirists, essayists, pedagogues, and dreamers, numbering more than a thousand, a catalogue of the names of whom is given. After the preface, we read a life of the incomparable archiater, or chief physician of the Pope, Paulus Zacchias, by the most noble, *magnifico*, most excellent and skillful Georgius Francus, who, by others of his admirers, is called, in Latin verses commemorative of his fame, a Hippocrates, a Podilarius, a Galen:—

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* Pauli Zacchiæ Romani, Totius Status Ecclesiastici Protomedici Generalis, Questionum Medico-Legalium, Tomi Tres. Olim aucti et emendati à viro celeberrimo Joh. Daniel Horstio, nunc pluribus in locis notis et Observationibus curiosis qua Juridicis, qua Medicis, quas benevole communicarunt, celeberrimi Icti et Medici, Quorum Catalogus post Prefationem videre est, illustrati, emendati atque adaucti a Georgio Franco, Med. et Phil. Doct., P. P. Universit. Heidelberg. Pro-Cancellario, Facult. Medic. Seniore, Diverss. S. R. I. Electorum ac Principium Archiatro, C. P. Cæsar, Academ, Natur Curioss. Argo a et Italicæ recuperatorum Collega. Opus omnibus Juris, utriusque Medicinæ peritis, nec non Tribunalium, (Ecclesiastici Civilis,) Assessoribus, maxime necessarium. Cum gratiâ et privilegio Sacræ Cæsar. Majestatis. Francofurti-ad-Mænum: Sumtibus Johannis Melchioris Bencard, MDCLXXXVIII.

† Reference is made, in encomiastic terms, to the work of Fortunatus Fidelis, and a double literary fraud, of which it was made the subject, is revealed by Francus. It seems that an anonymous writer, a crafty old fox, (*veterator*,) put forth the work of Fidelis, under the title of *Schola Jureconsultorum Medica, Relationum, Libris Aliquot Comprehensa*, as the production of Reinesius of Altenburg, in Saxony, a well-known professor and man of letters; and, in order to give the affair a greater show of truth, a preface was introduced, as having been penned by Reinesius. The fraud was exposed by Merklin, who showed, among other things, the great difference in the style of the imputed and of the real editor.

> Hic vir, hic ille scrutator Justiniani
> Mire conjungens *præcipe* cum *recipe*.

No offence can be taken at the length of the life of Zacchias, which occupies but three pages; one of these is filled by an enumeration of the successive appearance of the nine books of legal medicine, and of other works from his pen. The biography opens with a quotation from Aristotle on the hereditary transmission of mental qualities, to the effect that the good spring from the good; and of this Francus thinks that a proof is furnished in the fact of Zacchias springing from a noble family in Rome. Boethius is cited to show that good blood makes virtue to shine more conspicuously. A passage from Ovid's Metamorphoses is next introduced, expressive of the wonderful powers and successful labors of the Roman medical jurist, whose fame is represented to be allied with that of Rome herself. After all this heralding, the actual narrative of the life of Zacchias is summed up in a few lines, communicated to the editor by his friend Albertus Guntherus Saxo, and amounts to little more than the fact, that the author of the celebrated *Questiones Medico-Legales* was born in Rome, A.D. 1584, and died in 1659, aged seventy-five years; having filled the offices of first physician to the Hospital of San Spirito, to which he was appointed by Pope Innocent X., and of physician to the pontifical palace by Alexander VII. Of the ways and manners of the man, the superlative Francus says nothing, which, considering the various tastes and accomplishments of his professed idol, must be a matter of regret to all who like to see or read of genius in its hours of ease and in dishabille. All that the German pedant allows us to imagine of Zacchias out of his study, is his grave walk and oracular prescriptions, in his rounds through an immense hospital, and his obsequious homage to two popes.* We should have been unable to make even incidental mention of the varied accomplishments of the great Roman physician, but for the information in the page given to him by Tiraboschi.†

In the midst of the eulogistic offerings to the merits of Zacchias, we meet with two short addresses from himself; one to the medical reader, the other to the learned in the law, invoking their kindly reception of his work and telling of the pains taken in its preparation. To the former he holds out the language of advice, and recommends him to pay more attention to what is spoken, than to the person who speaks. As evincing the sincerity of his intentions in preparing his work, he takes God and man to witness, that he was intent only on collecting what was true. The legal reader is addressed in terms of propitiation, as if the author had ventured on ground with which he was not familiar, and on which his points of law might be commonplace, if they were not erroneous.

The work of Zacchias, divested of its wrappings and bedizenings, is still somewhat of a parti-colored character, and embraces a number of themes not related to the main subject. It evinces a spirit of scholastic subtlety which was so prevalent in that age, and which, although luxuriating most in the field of theology, displayed itself in every department of literature and even of science. Thus, for example, under the head of *Questio de Amantibus*, we have a dissertation on Love and Melancholy, and an inquiry into the seat of love, and whether it is in the brain, the heart, or the liver. Miracles being the theme, the Roman author asks:

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* The other productions of Zacchias are—I. On Quiet in the cure of diseases. II. Sudden and unlooked-for deaths, and their precognition, and the precautions required. III. Hypochondriacal affections, written first in Italian and afterwards translated into Latin by Khone. IV. On the Oriental opobalsam. V. On the Miracles recorded in Holy Writ, in their physical relations. This last is mentioned by Bardi in his eulogy of Zacchias, who, as we learn on the same authority, delivered discourses on the following subjects, in his native tongue: On the passions of man, and the evils to which they give rise, and of their cure by physical as well as moral means; on beer and fermented liquors; on contagion, in which it is shown that there is much less danger from this cause than is generally imagined; on Lent, and the means by which it may be kept without danger to health; on kissing; on laughing and crying.

† Storia delta Letteratura Italiana, tomo viii. p. 324.

What is a miracle? He next treats of prophecy, of miraculous cures of diseases, and miraculous deaths; giving examples of each. Still on theological ground, he speaks of fasting and Lent. In another section, in imitation of Hippocrates, he discourses on "Air, Waters, and Places." In a fresh chapter, he mentions the cloaques and the aqueducts of Rome. On the subject of matrimony, he insists on larger marital privileges than would be at all consistent with the charter of the Woman's Rights school of the present day. Thus we are told, that a woman who refuses to go to the dwelling of her husband, commits a mortal sin; that a man may castigate his wife mildly and in moderation, especially if for cause; and that a woman cannot be said to be unreasonably punished by her husband if he inflict on her a cuffing and slaps, and do not beat her with a stick or a cudgel. It is also conceded to be part of the husband's privilege to persuade his wife, by a marital discourse, to make him her heir. The husband's assertion of his having had carnal connection with his wife must prevail over her denial to the contrary.

The first of the three volumes of the work consists of five books, each of which latter is divided into what we shall call sections, (*Tituli*); then again into "questions" or subheads of the several subjects which come up for discussion. The four sections of the first book treat of Age, in its several periods, from infancy to senility and decrepitude; Parturition, legitimate and vital; Pregnancy, Superfœtation, and Moles; Cause of Death from Delivery, and Cause of this last; Resemblances and Dissimilitudes of Children to their Parents. The second book, in its four sections treats of Dementia, and Lesion of the Reasoning Faculties, and all the Diseases which disturb Reason; Poisons, Sorcery, and other Congenerate Matters; Various Questions touching Bodily and Mental Infirmities of a Slave or Servant, which would render null and void the sale or hire of such Slave or Servant. Book third has three sections, which relate severally to Impotence, Feigned Diseases, Plague and Contagion. Book fourth treats of Miracles, Virginity, and Rape*—an odd conjunction of subjects, and which might furnish matter for satirical remarks. In the fifth book we read in four sections, about Fasting and Lent; Wounds; Mutilation of the different members of the body, of which the virile one is declared to be the chief, (*pater est omnium membrorum;*) Air, Waters, and Places. Zacchias, it will have been seen, and also, as we shall show hereafter, does not make any attempt at a natural division, or the relation of one to the other, of the several subjects of which he treats. The last question of this fifth section is on Sewers, Aqueducts, Canals, Gardens, Orchards, Furnaces, Dung-heaps, Privies, Stables, and offensive Manufactures. All of these topics are discussed in relation to their influence on the public health, and hence they come under the head of hygiene rather than of medical jurisprudence.

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* Question fifth of this section is given to the subject of bestial violence done to the youth of the male sex. "Stuprum non modo in puellas et virgines et viduas committitur. Alciat et alii apud Carrar *de med, part* ii., No. 200, sed, à scelesitissimis hominum, Naturâ abutentibus, etiam in masculos patratur."

The second volume begins with the sixth book of the entire work. The first section is on the Wrong-doings of Physicians which are punishable by law. Its contents may hereafter engage our notice in connection with medical ethics, to which rather than to medical jurisprudence it more especially belongs. Still we must not pass it over in silence on the present occasion. Zacchias wrote on this theme in conformity with the expressed wishes of some of his friends. It is not his intention, he says, to speak of all the shortcomings of medical men, but only of those which are committed through malicious intent, or from negligence and ignorance, in the treatment of the sick, and which subject the offending party to the penalties, not only of the civil, but also of the canon law. The author enters his early protest, however, against confounding physicians who practice on rational principles and according to the teachings of philosophy, with the herd of pretenders who dabble in drugs, and busy themselves in prescribing for the sick or in practicing minor surgery, especially phlebotomy, and with another set who deal in aromatics and balsams, and also empirics and chemists, (alchemists ?)* and the whole brood of quacks and mountebanks. Not alone does the male sex furnish the entire list of irregular practitioners. Silly women also play their part, either in administering to the sick or in dispensing medicines, or in exercising the obstetric art. Were Zacchias living at the present time, there is reason to believe, from these remarks of his, that female colleges of medicine would find little favor in his eyes. One of the commentators of the work enlisted by Francus, quotes Pliny's complaint, that, in this art alone, any man setting himself up for a physician is immediately credited, although the danger is greater from deception in this than in other cases. The law had no punishment for gross ignorance; there was no penalty to warn of the danger occurred; and the doctor was allowed to kill men with impunity. At the present time, and in our own happy land, the law interposes no obstacle, inflicts no punishment on any knave who volunteers to cure disease in total ignorance of its nature and of the functions which it deranges, and whose impunity is the greatest when his pretensions are the most extravagant and absurd. It is only the regular and educated physician or surgeon who is mulcted in damages to feed the cupidity of a patient whose obstinate disobedience to professional directions were chiefly instrumental in bringing about the failure of the remedial means employed.

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* Chemistry proper, as a science, scarcely had existence at this time.

The circumstances in which malicious intention to injure or destroy a sick person confided to his charge, or in which the physician acts in a negligent manner or through ignorance, are examined in detail. The very thought of a medical man being so utterly faithless, base, and cruel, as not only to prolong the period of the disease of a person who trusts his life in his hands, but also to administer drugs which will produce an aggravation of the suffering of the patient, and death itself, is so abhorrent to every feeling of humanity, that, in this age of the world at least, or at any rate among civilized and Christian people, its occurrence can hardly be thought possible. This is one of the monstrous crimes on which the laws are silent, for the reason that their perpetration is deemed to be without ordinary motive, object, or excuse; in fine, so monstrous as not to be put on ordinary record, for fear of contamination and evil suggestion by the very naming of them. If the Roman physicians of the regular class were open to such imputations in the time of Zacchias, we have reason to congratulate ourselves on a purer morality at the present day. No code of ethics, however minute it may be in telling what the physician is to do and what not to do, in his intercourse with his patients, hints even at such a gross infraction of divine, to say nothing of human law. We cannot, we fear, speak with equal confidence of the freedom of all the rank and file of our profession in these modern days from the two other charges to which physicians are said, in the work before us, to be sometimes amenable. These are, as previously stated, ignorance and negligence. Six specifications of the display of ignorance are adduced; some of them the result of self-sufficiency and rashness; others are manifested in wrong pathology and therapeutics, but the error in some of these is made to rest on theoretical grounds. To direct mild remedies when an active treatment is required, and to urge the latter when the former would be sufficient, are specified among the errors from ignorance. Here and there we glean a knowledge of the favorite treatment of a disease, which is not without interest; as, for instance, when certain physicians are charged with dereliction of duty in neglecting to draw blood in dysentery with inflammation; the remedy being clearly indicated by the pain, the fever, and the inflammation, but withheld by them on account of the intestinal flux. Ignorance is also charged on the physician who attaches undue importance to a prominent symptom, while neglecting the essential characters of the disease, and, on the other hand, omitting to treat a troublesome symptom by any special remedy, under a belief that it will follow the course of the main disease. Zacchias tells, on this occasion, of the case of a man who, while laboring under a simple tertian fever, was, at the same time, much distressed with cardialgia. His physician rejected the advice of the author to give the patient food just before the accession of the paroxysm, with a view of protecting the cardiac orifice from the irritation of acrid bile; and the consequence of this obstinacy was a fatal termination of the disease. The observations and teaching of Torti, at the beginning of the next or eighteenth century, shed so much new light on the nature of the complications of organic disorder with periodical fever, and on the necessity of large doses of bark for treating these cases with success, as to convince every modern practitioner that neither Zacchias nor the younger and self-willed physician with whom he was brought in contact, was correct in his pathology and in the indications of cure. The case was one of those malignant or pernicious intermittents, our American congestive fever, marked by cardialgia, and which called for a more vigorous treatment than would seem to have been indicated by the apparent simplicity of the fever, or the gastric disorder which was combined with it. We must not, however, omit to repeat the assertion of the Roman author, that he had seen persons with these fatal symptoms snatched, as it were, from death, by administering food on the accession of the paroxysm. Galen is cited as corroborative authority.

Addressing himself more particularly to an exposure of the errors of regular physicians, especially in as far as they relate to morals and science, Zacchias adverts to the harsh strictures on medical men, in which some writers have indulged, but which are more particularly applicable to greedy pretenders. Avarice, so deeply implanted in the human breast, must, of course, find its place among physicians in common with the rest of mankind. The examples of this vice in the profession are, however, few, and the very reverse quality, or disregard of personal interests, is the prevalent sentiment. Envy and detraction among medical men are accusations not so easily disposed of. Associated with ignorance are the confident promises by a physician of the speedy restoration of his patient to health. The empirical tribe is particularly lavish of these promises, safely speculating on the ignorance and fluxibility, to borrow an expressive word from the original before us. Garrulity and gossip, under the head of loquacity, are cited as faults of medical men, when they extend to a revelation of the infirmities and secret personal and family details of their patients. There are, however, limits to professional reserve in such matters laid down by law, of which we shall speak at another time.

Very decided language is uttered on the subject of one medical man consulting with another respecting the treatment of a patient. Thus we read that a physician, who, in a case of doubtful issue, refuses to consult with another member of the profession, commits a mortal sin, (*mortaliter peccat.*) The preference of a friend, or one whom he knows, over another, who is a distinguished practitioner, by the physician in attendance, is referred to as a matter of doubtful propriety. But, on the authority of Silvaticus, a physician commits a mortal sin, who, from hatred or envy, refuses to meet in consultation a more learned associate, or who, through friendship or any other feeling, calls in a person of inferior qualifications. The force of this denunciation is lessened not a little by what follows, viz., that by canonical law not only is the physician not blamable for refusing to consult with a Jew, or with one who does not believe in the Christian religion, or even a heretic, (not Catholic,) but his doing so would be a mortal sin. Under the head of errors of omission, relating to the advice to be offered by a physician, a number of questions are brought up for adjudication; such as recommending the sick to confess and receive the rites of the church, prescribing for the sick who are living at a distance, the utility of coition in the cure or prevention of any disease, the effects of virginity on the bodily health, the consequences of ebriety, the extent of the claims of the public and of the sick on medical men. Errors of commission in the practice of medicine are also passed in review. Next are treated of, in some detail, the errors of commission and those of omission on the subject of fees, and the claims on the professional services of a physician by those who are unable to remunerate him. Then follow discussions on various questions relating to the conduct and misconduct of surgeons and the like craft, and of dispensers of aromatics and of salves and unguents, and of obstetric grannies, and, finally, of the assistants and nurses in the sick-room.

We pass over the second section of the sixth book, which treats of Tortures and Punishments. Among other evidences of our living in a more humane age than our forefathers is the abolition of torture, and hence we are only called on to speak of it as a purely historical question. In this light it does not demand, at the present time, any notice from our hands. Nor can we dwell on the matter of the next section, which consists of an inquiry into the right of precedence between the physician and the jurisconsult or lawyer, as he is now-a-days more generally termed. The subject is not without some amusement for those who take either side of the question; they will find sketches of professional men drawn in other than very flattering features. It is true that the objections arrayed against medicine and doctors are met by the author in due form, and the same must be said of the practitioners and professors of law. Men will argue from the last rebutting testimony, but there is ill nature enough in all of us to secure a lively recollection of the accusations and slander on the other side. The actual and relative merits of medicine and law are the subject of the concluding subsections, or "Questions," as they are called in the volume.

The seventh book opens with a section on spinsters, including hermaphrodites, which is followed by one on the Divine offices, or rather on the infirmities and diseases which excuse or prohibit their exercise. Curious questions make up the third section of this book. They run upon conjugal debt or obligations, relating solely, however, to sexual congress; and are examined and argued with a gravity and details quite puzzling to all our present received notions of delicacy, if not of ethical propriety. We care not, therefore, to follow the author in his replies to "*Quando, quantum, quomodo debitum conjugale sit reddendum?*" nor to the other respecting the circumstances which excuse husband and wife from the reciprocal payment of these important dues. A dissertation on female semen in this section gives occasion, or rather opportunity, for a great parade of useless learning, both medical and theological, including the subject of the "immaculate conception." Sanchez and other canonists indulge in minuteness of detail on the union of the sexes in married life, which are not called for by any consideration of duty or of piety, but which are, on the contrary, as repugnant to physiology as they are to common delicacy. Zacchias is very free in his quotations from this class of writers, to imitate whom would now properly subject the offender to punishment for erotic details, *contra bonos mores.*

In the fourth section of the seventh book the author treats of Marks, (*Stigmata,*) including under this head all those spots, stains, and scars seen on the skin of different persons; some of which are of intra-uterine origin, others the result of wounds and diseases, and occasionally they are caused by artificial processes.

The initial section of the eighth book contains no less than twenty-four subsections or questions on "Irregularity," which, as understood by the canonists, is that deviation, either of the body or mind, from its normal standard, which unfits a person for discharging the sacred offices of the church, either on account of congenital defects or subsequent disease, mutilation, disfigurement, or personal impurities. Under the head of diseases of the spirit the canonists rank epilepsy and apoplexy. In speaking of spiritual irregularity the question comes up: whether the practice of medicine contributes to this state? The reply of the author is in the negative, although the temptations to err are great. The hereditary tendency to epilepsy is alleged to be greater on the side of the mother than that of the father. A detailed account is given, under separate heads, of the disorders and malformations of the different organs. Gout and arthritis are also spoken of in this connection, and then itch, leprosy, syphilis, (*morbus gallicus,* as it was called,) fever and the plague.

The subject of the second section of this book is on Medical Remedies, and contains four subsections or questions, viz.: I. What are medical remedies, what persons are liable to err in the use of them, and is the patient bound, and in what cases, to obey his physician? II. Dietetics. III. Pharmaceutics. IV. Surgery. Medicine works by three sets of agents, viz., diet, pharmacy, and surgery. In the use of remedies blame is attributable, at one time, to the physician, at another, to the sick person, and again, to the attendant or nurse. The first may fail to foresee what ought to have been foreseen, or he may imagine that which does not come to pass, or grant what ought not to be granted, for the sake of gratifying the patient. More commonly this latter personage is to blame in not only not obeying, but rather in spurning the advice and prescriptions of his physician, in order to satisfy his own desires, or from dislike to bear the discomforts of sickness. The attendant sins in not carrying out the directions of the physician, or in giving improper food and drink to the sick person, and sometimes in advising a recourse to means, the very opposite of those which had been regularly prescribed. The extent to which the patient may be supposed to be bound to conform to the advice and directions of his physician is discussed with earnest particularity. Let a sick person know then (*Zacchiâ loquente*) that he who rejects his doctor's advice and medicines, not only acts in contradiction to a proper regard for his own body and to the sacred page, but also against the intentions of the Omnipotent Deity who created medicable things out of the earth for man's health and well-being. Man, as the custodian of his own health, is bound to avail himself of all the means offered by Nature for the purpose of preserving it. The patient is not excused for disobeying his physician on the ground of the disagreeable properties and harsh operation, or expensiveness of a remedy. Original antipathies and idiosyncrasies of the patient must, however, be respected by the physician.

In the third section of the eighth book, under five subheads or "Questions," the author inquires into the effects of convent life on nuns, and the diseases which would justify or require their abandoning it. There were only three causes allowed by papal rescript for a nun leaving her convent, viz., for fire threatening destruction of the building and the life of the inmates, epidemic pestilence, and leprosy. It is only with the two last that the physician has to deal, and these, accordingly, are made the subject of disquisition by Zacchias, in his usual painstaking minuteness of detail and love of scholastic refinement. Something we glean, on the occasion, respecting the visitations of epidemic disease and the states of the air at the time of their prevalence, and also in regard to plague and contagion, and the extent of range of this latter. Frequent reference is made to the regulations laid down by the authority of the Popes in such matters, so far as they are supposed to affect these recluses, and to furnish reasons for their temporary withdrawal from the convent, not alone for the sake of the individual, but, also, for the protection of the other inmates. The author inquires into the probable necessity of other diseases, besides those specified above, furnishing cause for leaving the convent. He expresses his surprise that writers like Sebastian de Soto, should regard syphilis, ulcerated cancer, scrofula, and ophthalmia as sufficient to authorize removal, while they overlook entirely such a terrible disease as epilepsy, and the danger of the spectators and by-standers being led to sympathetic imitation of the one first taken with the convulsions. The mention, by an orthodox Catholic and a Pope's physician, of syphilis, among the diseases of females who had made a vow of perpetual chastity, was calculated to give additional strength to those reformers who denounced the impurities and vices which had become, unhappily, too common in monastic life. Long before Zacchias wrote, Boccaccio had exposed them in his Decameron.

The ninth and last book is given to the following subjects: the time when the fœtus becomes an animated being; exsection of the fœtus, or the Cæsarean section; the impediments to copulation and generation; the resigning of benefices; the period of segregation of those suspected of having the plague, in the inquiry into which we find a discussion on plague and contagion, as an appendix to the third section of the third book; the question whether the making of silk during the prevalence of the plague should be prohibited as an offensivve manufacture, (*ars immunda;*) on tobacco, on chocolate and brandy, (*aqua vitæ;*) those diseases which prevent the receiving of the Eucharist; dissolution of matrimony, divorce, separation from the connubial bed, and freedom from espousals; the female semen; in the order of nature, is the first born the first conceived? and in the case of twins, which is to be supposed the one born first? The reader will wonder at the variety of the themes and their odd and unexpected collocation, as evinced in these contents of a single which is the concluding book of the second volume. They are introduced and discussed with good faith, and in all sincerity and gravity. The same may be said of the entire work; and on this account as well as on that of the importance of many parts of it, and from its being inaccessible to the great body of our readers and to the profession at large, we have been induced to give, probably, the first analytical notice of the *Questiones Medico-Legales* in the English language; nor have we seen the like in any other to guide us in our task. But we are anticipating what might be more appropriately said after our notice of the contents of the third volume. These consist of eighty-five answers or opinions, by Zacchias, on medico-legal questions: they partake of the general character of the contents of the body of the work—profuse learning and copiousness of detail; but, it must be added, they evince also great perspicacity and clearness of argumentation. Some of the *Consilia* of the author are quoted in modern works, and all of them possess a certain degree of value as curious medical, if not always medico-legal histories of rare cases. That of Casali affords a good specimen of the manner in which Zacchias handles his subject, in his bringing to bear a large amount of erudition on the causes which affect and alter the physiognomy, and make the question of the recognition of personal identity very difficult and sometimes impracticable. Foderé, one of the best writers on legal medicine, has followed closely the line of argument and illustration traced by Zacchias, in the case of Casali, respecting the changes in the human countenance and form, caused by climate, diet, hardships, mental emotion, and age. Did space permit, we would cheerfully place on these pages a translation of some of the "opinions" of the author. We hope, at any rate, to be able to refer to them again before we have done. In addition to the "opinions" of Zacchias himself, there are decisions, one hundred in number, on the same and similar topics, by the *Rota Romana*, or Court of Appeals,* which conclude the work.

Were we so inclined, it would be easy for us to indulge in a parade of bibliographical lore, by introducing a long list of writers on medical jurisprudence, from the time of Zacchias to the present day. It will be sufficient, however, for our immediate purposes, to refer to the two volumes of Wildberg, now before us, entitled *Bibliotheca Medicinæ Publicæ*, the first of which contains a list of all the works, in the shape of systematic treatises, essays, and disquisitions on particular branches of forensic medicine, covering a period of nearly three centuries, or from 1533† to 1818,‡ and classified according to subjects. They number little short of 3000, (2980.) The second volume contains a correspondingly copious catalogue of all the writings on political medicine or public hygiene, amounting to upwards of 2000 in about the same period. Orfila, in the beginning of his work *Leçons de Médecine Legale*, gives the titles of one hundred and thirty-three works on the science, brought out during the first third of the present century. In the brief period which has elapsed from that to the present time, systematic works of reputation, and a large number of papers on different branches of the science, have been published. To some of these we shall have occasion to refer as we advance in the present article.

But while we decline to test the patience of our readers by a long enumeration of names and titles, it is but due to the subject and to them that we should continue our historical outlines of medical jurisprudence. Towards the middle of the seventeenth century, and not many years after the first appearance of the great work of Zacchias, France could point to two productions on the subject—that of René Gondri, (1650,) and that of Nicholas Blegny, (1684,) which was followed by the more useful work of Devaux, (1701.) These, as being confined entirely to the art of making reports, fall far short of the classic treatise of the German writer, John Bohn, (*De renunciatione vulnerum,*) in which, among other topics, he discusses infanticide, and declares his disbelief of the hydrostatic test; alleging that the fœtus may breathe in its passage during delivery. In another work, Bohn lays down the twofold duty of a physician in clinical and in forensic medicine, *De officio medici duplici, clinico et forensi,* 1704, and gives rules for the conduct of a medical man in attending the sick, and in delivering evidence before a court of judicature. Frederic Hoffmann, one of the greatest names not only of German but of European medicine, contributed valuable papers on several points of the science, about this period—the end of the seventeenth and beginning of the eighteenth century. Shortly after the publication of Bohn's last-mentioned work, or in 1722, appeared the medico-legal body of jurisprudence, etc., by M. B. Valentini.* This author's rebuke of the medical witnesses of that time are, unhappily, too strictly applicable to those of the present day. Proud of their titles, but yet on these occasions exciting ridicule and losing all the estimation which they once enjoyed. Of a similar character, but inferior merit, was the collection of decisions and observations made by J. F. Zittmann, 1704. The *Systema Jurisprudentiæ Medicæ* of Alberti, in six volumes, dates from Halle, between 1725 and 1747—the former, the year of publication of the first and second volumes; the latter, that in which the sixth volume was brought out. Among the numerous questions elucidated by this laborious writer, may be particularized, those relating to conception and utero-gestation. He is the author of numerous separate treatises and dissertations on subjects of legal medicine. Following the work of Alberti was the *Institutiones Medicinæ Legalis vel Forensis,* by Teichmeyer, in 1722. The merits of these Institutes may be inferred from the fact of their having been made the text for Haller's celebrated lectures on Juridical Medicine, published 1782–1784, after his death. Hebenstreit, in 1753, issued his valuable work, entitled *Anthropologia Forensis,* which is highly prized by jurisconsults. Of later date were the *Institutiones* of Kannegieser, 1777, and the *Conspectus* of Sikora, 1780. To the celebrated surgeon, Antoine Louis, who flourished in the middle and latter part of the last century, is medical jurisprudence largely indebted for illustrating some of the most difficult questions connected with it, both by formal essays and in cases before the courts, in which his opinion was formally invoked. Of these, we may mention more particularly his letters on the certain signs of death; his memoirs on drowned persons, and on the means of distinguishing, in a body found hung, the marks of suicide from those of assassination; on tardy births, etc., which were collected in two volumes, and published in Paris in 1788. Equally luminous, and in advance of all preceding labors of the same kind, were his opinions (consultations) delivered in the cases of Monbailly, Syrven, Calas, Cassagneux, Baronet, etc. etc., which have been preserved in the first forty-three volumes of the *Causes Célèbres.* Petit, a contemporary of Louis, engaged in a controversy with him on the question of protracted pregnancy. About this time, (in 1749,) Beccaria of Bologna sent out his work, *Scriptura Medico-Legalis.* The impulse given to the study of pathological anatomy by another eminent Italian, Morgagni, in the publication of his great work, *De Sedibus et Causis Morborum per Anatomen indagata,* 1762, was productive of a number of happy applications to legal medicine. The doctrine, as it is sometimes called, of infanticide, was brought to maturity by the investigations of Daniel and Ploucquet, on the new methods of ascertaining respiration of a newly-born infant, and by Camper, Metzger, and Portal. Daniel is the author of a Library of Legal Medicine, and of Medical Police, 1784. Ploucquet wrote, at the same time, essays on points illustrating infanticide, and on the diagnostic signs of death. Camper, the celebrated anatomist, contributed two works on subjects of medical jurisprudence: the first, an Anatomico-legal Dissertation on the signs of life and death of newly-born infants; the second, Reflections on Infanticide, together with a plan for a hospital for foundling children; also the causes of infanticide and suicide, accompanied by experiments on the insufflation of the lungs of still-born infants, 1774. Metzger deserves more than a passing notice. His succinct system of Forensic Medicine, published in Koningsburg, 1795, is pronounced by Sprengel to be the best work on the subject; and Marc, a still better judge of its merits, describes it as an excellent systematic treatise. The latter writer speaks favorably also of the collection of consultations by Metzger, many of which relate to the study of mental disease in connection with medical jurisprudence.

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* The "Rota Romana" has a collegiate constitution, and consists of twelve persons, of whom three must be Romans, one a German, one a Frenchman, and one a Spaniard.

† L. Guarici—De conceptu natorum et partu septimestri.

‡ A. Hencke—Abhandlungen aus dem Gebiete der gericht lichen Medizin.

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* Corpus juris medico-legale, constans pandectis, novellis et authenticis iatrico-forensibus.

The first approach to an entire system of medical jurisprudence in France was by Foderé, toward the close of the eighteenth century—1796. No wise elated by the speedy sale of this work, the author set about maturing his subject; and so intent was he on the faithful performance of his task, that he allowed seventeen years to elapse before he brought out a second edition, which it would be more correct to regard as a new work, cast in a different mould, and both enlarged and improved. Since the beginning of the present century, medical jurisprudence has received large accessions, especially by a closer investigation of the states of mind constituting unsoundness, or insanity, and the application of knowledge thus obtained to determine various civil and criminal questions relating to moral and legal responsibility; and also by a nicer appreciation of the effects of poisons, and of the chemical tests for ascertaining their presence in the human body. The first systematic work in this new period is the posthumous one of Mahon, on Legal Medicine and Medical Police, 1807. Mahon was the professor of these branches, for the teaching of which chairs were first established in France by the revolutionary government. Of a somewhat earlier date, 1800, was the elementary volume of Belloc. Wise and humane reflections on the practice of the science will be found in the treatise of Vigné, 1805. Of a higher character than any work of the kind that had preceded it is the Treatise on Poisons, or *Toxicologie Générale*, by Orfila, which was followed in a few years by his *Leçons de Médecine Legale.* The elaborate work of Devergie, *Médecine Legale, Theorique et Pratique,* carries us still further in the philosophy and varied practical relations of the science. Presenting less of disquisition, and a still larger amount of minute details, is the *Manuel Complet,* the Complete Manual of Legal Medecine, by Briand, which has swelled, in successive editions, from a thin octavo to its present large size. We should be unjust to a great name and to the history of medical jurisprudence were we to omit noticing, in this place, the contributions of Chaussier, who was among the first, in connection with Fourcroy and a few others, to organize a system of medical education under the new circumstances in which France was placed by the revolution. This eminent professor, when yet a young man, awakened attention and excited emulation by a memoir presented to the Academy of Sciences at Dijon, 1789, on the great importance of the study of juridical medicine, and based, we may suppose, on a consultation in the case of an accusation of infanticide two years previously. Chaussier, in addition to the papers which were written in his own name, and which appeared in the form of a collection of consultations, memoirs, and reports, expressed his views through the inaugural theses of some of his pupils. Of this character are those on infanticide; the mode of proceeding in autopsic examinations; spontaneous erosions and perforations of the stomach; ecchymosis, suggillation, contusion and bruises. These four dissertations have been reprinted and bound in one volume, 1819. We derived much instruction from a perusal of them in our earlier study of medical jurisprudence. Worthy of notice, also, is the volume by Capuron, entitled *Médecine Legale relative aux Accouchemens.*

It would be impossible to give any historical notice of French legal medicine without emphatic mention and praise of the invaluable repertory of memoirs, analytical investigations, and practical details on nearly all the topics which go to make up the science, contained in the *Annales d'Hygiène et de Médecine Legalè*, during the period of thirty years which has elapsed from the first appearance of that Journal, in 1829, to the present time. Prominent among the many who have enriched its pages, we meet with the familiar names of Bayard, Boys de Loury, Brierre de Boismont, Chambeyron, Chevallier, Devergie, Esquirol, Leuret, Marc, Ollivier (d'Angers,) Orfila, Tardieu, etc. etc.

We shall not, at the moment, name the leading works on medico-legal science by German writers in the present century. They will be spoken of in connection with some of the branches of the general subject. We must not, however, pass over in silence the instructive treatise of Hoffbauer on Legal Medicine, in its relations to the Insane and to Deaf-mutes, 1807. It has been translated into French by Chambeyron, and enriched with notes by Esquirol and Itard.

In reverting to Italian writers on medical jurisprudence we meet with Tortosa, whose Institutions of Forensic Medicine was, at the time of its publication, 1802, regarded as the most elaborate and scientific work of any that had been written in the language on that science. "It is divided into three parts, viz.: 1. *Ecclesiastical* jurisdiction. 2. Subjects relating to the *civil* courts. 3. Those which relate to the *criminal* courts."* Of a recent date are the Introduction to Legal Medicine by Martini, and Legal Medicine by Barzelotti, according to the spirit of the civil and penal laws in vigor in the different governments of Italy. This last is a treatise of the highest order, and may be consulted with advantage as well on the great points involved in the principles of legal medicine everywhere as on the modes of practical procedure in the Italian peninsula. Martini exhibits medical jurisprudence as resting on canon law.

The entire neglect of medical jurisprudence in England, at a time when it had engaged the attention of so many able writers in France, Germany, and Italy, may be inferred when we say, that, with the exception of the small and imperfect production of Farr, no work, with any pretension to a systematic character, made its appearance in that country before the beginning of the present century. Farr's small volume, published in 1787, bore the title of "Elements of Medical Jurisprudence." Our edition is the second, which was brought out in 1814, a circumstance of itself proving the limited views and imperfect knowledge of the science at this time, when such a tiny duodecimo, of only 139 pages, was all that was offered to meet the wants of English readers. It is, after all, as the author admits in his preface, little more than an abstract from the *Elementa Medicinæ* of Faselius. The next, in succession, was a "Treatise on Medical Police," by Dr. Robertson, in two volumes, published in 1808. Dr. Bartley, of Bristol, is the author of a "Treatise on Forensic Medicine," than which it is impossible to conceive any production more meagre or imperfect. Dr. Male is undoubtedly entitled to the grateful notice of the medical historian as the author of the first respectable English book on Forensic Medicine. Our copy is of the second edition, 1818, and consists of 278 pages small octavo, dimensions which would fall far short of the requirements of the present day. Of a more comprehensive and instructive character than any which preceded it, is the "Principles of Forensic Medicine, systematically arranged and applied to British Practice," by John Gordon Smith, M.D., 1821. Useful information is communicated by the same author in "Hints on the Examination of Medical Witnesses," 1829. "In addition to the above writings, we may record the 'Medical Ethics' of Dr. Percival, which, although not intended, nor indeed calculated for practical instruction, contains some interesting allusions to our subject. Nor must we omit to enumerate the several valuable monographs with which different English physicians have sought to advance the progress of medico-legal inquiry; as, for instance, the celebrated paper of Dr. Hunter 'On the Uncertainty of the Signs of Murder in the case of Bastard Children,' Dr. Haslam's intelligent and judicious essay 'On Medical Jurisprudence as it relates to Insanity, according to the Law of England,' and Dr. Hutchinson's laborious 'Dissertation on Infanticide.'"* Two years after the publication of Dr. Smith's work, Dr. Paris and Mr. Fonblanque, a physician and a lawyer, brought out their joint contributions in a formal and elaborate shape, under the title of "Medical Jurisprudence." The authors display copious reading and minute research, and some of the leading topics are elucidated by their labors, but the production lacks unity and method, and contains irrelevant matter, or such at least as often calls off the attention of the reader.

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* Paris and Fonblanque.

The first and for a long time the only chair of Medical Jurisprudence in Great Britain, was endowed in the University of Edinburgh in the year 1806. The first incumbent was Dr. Andrew Duncan, Jr., whose father had been mainly instrumental in directing the attention of the public and the government to the importance of the subject. Of the gross ignorance of its simplest principles, and indeed of the whole science, by educated men in England, at this time, some idea may be formed from the observations made by Mr. Percival and Mr. Canning, in the House of Commons, in their strictures on the late or Fox ministry. We must premise that there are chairs in the University, the creation and filling of which rests with the crown, and the incumbents are hence called Regius professors. Mr. Percival, afterwards prime minister, and who had filled the offices of solicitor-general and attorney-general, said, in the course of the debate, that "he should not dwell in detail upon all the acts of the late administration, but he confessed himself at a loss to understand what they could mean by the appointment of a Professor of Medical Jurisprudence. He acknowledged that he was ignorant of the duty of that professor, and could not comprehend what was meant by the science he professed." Mr. Canning, in the same debate, assuming a tone which might have been justified by the creation of a professorship of Astrology and Divination, "could alone account for such a nomination by supposing that, after some long debate, in the swell of insolence, and to show how far they could go, they had said, 'we will show them what we can do—we will create a Professor of Medical Jurisprudence.'" We are at the moment restrained from strictures on this gross ignorance, so publicly, and, as it were, ostentatiously displayed by men in high places, when we reflect that even now, after the flood of light shed upon the science of medical jurisprudence in all its divisions and ramifications during the last half century, the trustees and faculties of most of our medical colleges seem to be still groping their way, and quite as much at a loss to guess the meaning of the subject as were Messrs. Percival and Canning. We are left to draw this inference from the total want of measures for having this most important branch taught from a separate chair, or indeed taught at all.

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* Paris and Fonblanque, Medical Jurisprudence. We are indebted to these writers for a notice of English works on the subject to the date of the publication of their own, 1823, as well as for some of the bibliographical references in the preceding history. Our chief obligations in this way are due, however, to Foderé's *Introduction* and to Wildberg's *Bibliotheca Medicinæ Publicæ.*

Resuming our sketch of the progress of medical jurisprudence in England, we next meet with the elaborate and truly scientific work of Dr. Christison, on Poisons, to which currency was given in this country by the publication of the fourth edition, 1844.* The first edition appeared in 1829. A systematic work on medico-juridical science was begun by Joseph Chitty, an eminent pleader, and author of different legal treatises. The first and only part which ever saw the light was published in 1834. Its title, a Practical Treatise on Medical Jurisprudence, etc., etc., is a decided misnomer, as the volume is, in fact, a summary of anatomy, physiology and hygiene, with, here and there, some applications to medical jurisprudence. The author had studied medicine before law, and seems, in consequence, to have been unduly desirous of impressing his associates at the bar with a high idea of his knowledge of the literature of the profession to which he had first applied himself. The work was republished in this country, with notes. Ryan's small volume may be dismissed in a few words. Its American editor, Dr. R. E. Griffith, had higher requirements for a task of this kind than his author. Dr. Traill, the successor to Dr. Duncan in the chair of medical jurisprudence in the University of Edinburgh, is the author of a succinct and well-written notice of the general principles of the science—too brief for a systematic work, but good as a text-book. It also has been republished in the United States, with notes, 1841. In coming down to the present date, we can speak with confident praise of works on medical jurisprudence which approximate to a higher standard than was ever previously thought of in England. A reference to the treatises of Dr. Alfred S. Taylor and of Dr. W. B. Guy will fully confirm this assertion; and, we may add, that they have been enriched with notes and commentaries by their able American editors: Dr. Edward Hartshorne rendering service in this way to the former, and Dr. Chas. A. Lee to the latter of these two authors. Dr. Taylor's work on Poisons is also a valuable addition to the science of legal medicine. In the same line of successful illustration of separate points of the main subject, reference may be made to Watson's Medico-legal Treatise on Homicide, and Gavin's recent work on Feigned Diseases.

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* In Bell's Select Medical Library. 1845.

The principle of compensation prevails in the affairs of man to an extent not adequately appreciated, and in the matter of medical jurisprudence on American ground, while we have great cause to repine at the neglect to diffuse a knowledge of it by oral instruction from chairs in our medical and law schools, we ought to be thankful that it is not only saved from oblivion, but is kept alive, and, in a measure, watched with some interest by numerous volunteers from the great body of the profession; thus adding one to the many examples of the popular mind giving expression to wants and devising means for their gratification, in advance of the slow and hesitating steps of the delegated organs of public opinion and of the authorities who are supposed to be its exponents. American literature may plume itself on some works on medical jurisprudence of established character and undoubted reputation. First in the order of appearance, and in copiousness of matter and minuteness of detail on every point which can come up for discussion in our courts, is the voluminous treatise of the two Becks, Drs. Theodric Romeyn and John B., of whom the first is the designer and chief author. This work, in its successive editions, has attained such a magnitude and exhibits such a variety in its several parts as to approach to the nature of an encyclopedia. In this respect, indeed, the reader may sometimes labor under the rare inconvenience of an *embarras des richesses;* a fullness and an expansion which would interfere with a ready grasp and immediate comprehension of the point at issue. But the great, the essential requisite is fulfilled in the labors of these writers, viz.: the presence of all that is wanting, fairly and honestly, and, for the most part, artistically arranged. After all, who would not prefer abundance, even to redundancy, a comely, albeit somewhat obese form, to one with a meagre and sharp outline? This great work, modestly called "Elements of Medical Jurisprudence," has been repeatedly published in England, under the able editorial supervision of Doctors Dunlop and Durwall, and its value is warmly appreciated by the medical jurists on the continent of Europe. Doctor Romeyn Beck, in the introduction, bears grateful testimony to the merits of his preceptor, Dr. James S. Stringham, who was the first to deliver a course of lectures on medical jurisprudence on this side of the Atlantic. In 1804 this gentleman, then Professor of Chemistry in Columbia College, N.Y., voluntarily added to his regular course one on legal medicine. In 1813 Dr. Stringham was appointed Professor of Medical Jurisprudence in the College of Physicians and Surgeons of New York; but his failing health interfered with the active discharge of the duties of this new chair, and his death, in 1817, was a final blow to further labors in this line. Dr. R. Beck was appointed to lecture on Medical Jurisprudence in the Western Medical College of New York; and not long after Dr. Walter Channing was elected to perform a similar duty, in addition to that of his professorship of Midwifery, in Harvard University. Lectures on Medical Jurisprudence were delivered by Drs. Williams, of Berkshire Medical Institute, and Hale, of Boston, in the winter of 1822. The eloquent and impressive recommendation of Dr. Rush, in an introductory lecture in the University of Pennsylvania, 1810, in favor of the science, was not followed by any regularly devised plan for conveying instruction in it, nor have we heard of his urging on the trustees of the school the creation of a chair of medical jurisprudence. Possibly it was under an inspiration of the sort that Dr. Caldwell delivered a course of lectures on the subject in the winter of 1812–13. We are not apprised of these having been repeated, and we must infer that the eloquent lecturer failed to procure an auditory to encourage further efforts in that line. Judge Cooper, a friend and countryman of Priestley, after leaving the bench, resided for a time in Philadelphia, and was connected with the University of Pennsylvania as Professor of Chemistry and Mineralogy applied to the arts.* During this period he edited "Tracts on Medical Jurisprudence, including Farr's Elements, Dease's Remarks, Male's Epitome, and Haslam's Treatise on Insanity, together with a Digest of the Laws relating to Insanity and Nuisance, and an Appendix, containing Erskine's speech for James

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* Judge Cooper had filled a similar post in Dickinson College, Carlisle, Pa. He was ultimately connected with Columbia College, S. C., in which institution he was at first Professor of Chemistry, and afterwards President.

Hadfield, indicted for shooting at the King; an Abstract of a Report of the Trial of Abraham Kessler, indicted for poisoning his wife with white arsenic and laudanum; and a Memoir on the Chromate of Potash as a Test for detecting Arsenic, Copper and Corrosive Sublimate, 1819." The opening remark of the editor, in his preface, that "the study of Medical Jurisprudence is much more attended to on the continent of Europe than in Great Britain or in this country, where it has by no means received the attention due to its importance," is still applicable to both countries. We quote another sentence, which occurs toward the close of the preface, and which indicates wants not yet supplied in our medical schools. "In the present state of general knowledge, juries will not be satisfied to receive from a medical witness the very slight information he may have brought away from the place where he received his medical education; and unless he attaches more importance to Medical Chemistry, as he grows older, than he is taught to connect with it here, he incurs the hazard of finding more knowledge of the subject among those who are not of the profession than he professes himself." The next attempt to diffuse some elementary knowledge of the subject was made by Doctor Bell, who taught every year, for a period of eighteen years, in the Philadelphia Medical Institute, Medical Jurisprudence in addition to the Institutes of Medicine. The interest manifested in the lectures on the former branch by the class gave assurance of success to any subsequent attempt in the same line, if made on a larger scale and with more scientific appliances than were then at the disposal of the lecturer. Reference has been made in a preceding page to the creditable additions to English works on Medical Jurisprudence by American editors. We have now to speak of a production which is at once among the latest and the best on the science. It is "A Treatise on Medical Jurisprudence, by Francis Wharton, Esq., and Moreton Stillé, M.D., 1855,"—in the composition of which legal and medical acumen and lore have been happily combined.

We adverted, in a preceding page, to the diversified applications of the study of insanity to medical jurisprudence. The subject has enlisted the attention of some of the ablest writers during the last forty years, and it may be said to have given origin to a new branch of literature. The courts of law and the people generally had been willing to receive the plea of insanity as a bar to punishment for acts, which, if committed in a sane state of mind, would necessarily be regarded and treated as criminal. But both the courts and the people were startled at the first annunciation made on medical authority, as the result of medical observation, that a similar exemption from legal penalties may be rightfully claimed by individuals who are only partially insane, and whose mental faculties are manifested in the ordinary and natural manner, with the exception of the disordered faculty or propensity. This morbid condition of mind indicated by Pinel,* and to which Esquirol † was the first to affix the term *monomania*, has been acknowledged and commented on by their successors in the field of clinical and philosophical observations on insanity, or unsoundness of mind. The medico-legal relations of this view of the subject were seen at once, and have led to much discussion, which has sometimes been conducted with a heat bordering on acrimony. Our object now is not to discuss its merits, but merely to refer briefly to its literature, as developed in the pages of Georget,[1] Marc,[2] Briere de Boismont,[3] Leuret,[4] Calmeil,[5] Prichard,[6] Conolly,[7] Ray,[8] Pagan,[9] Simpson, (a lawyer,)[10] Clarus,[11] Hoffbauer,[12] Masius,[13] Haindorf,[14] Conradi,[15] Reil,[16] Wildberg,[17] Schulze,[18] Heinroth,[19] and most of the German medical legists, and also Feuchtersleben.[20] Among these we would make special mention, without undue national bias, of the luminous treatise of Dr. Ray, on the "Medical Jurisprudence of Insanity"—a work not only creditable to American medical literature, but one which has taken a high stand among foreign authorities. It preceded, by a period of two years, an English treatise with the same title, by Dr. Pagan.

Our readers, we hope, will not think that the time has been unprofitably spent in taking a retrospective view of the great field of medical jurisprudence, and of those who have acted a prominent part in it. We now pass on to a notice of the work of M. Briand. In an introduction of sixty pages, the author details the duty of a medical legist before the tribunals, both in criminal and civil cases, as laid down in the Code Napoleon. He discusses the following points: 1. What is the course to be followed in the inquiry and prosecution for crimes and misdemeanors? 2. In whom rests the authority to require the assistance of professional men? and are there cases in which these latter may decline to comply with the requisition made on them? 3. If among professional men there be any on whom the law more particularly relies. 4. What are the necessary preliminaries in all cases of *expertise*, and the general steps to be taken by the expert on the execution of the mission confided to him? 5. What are the rules to be followed in the preparation of reports, consultations, and certificates? 6. In what cases are physicians or surgeons responsible for the result of cases in their practice? 7. Finally, what are the honoraria allowed to physicians, surgeons, etc., in any case in which their assistance is invoked by the criminal courts? The consideration of these questions involves the whole subject of medical evidence and of medical responsibility, and constitutes an appropriate introduction to any professedly systematic work. Orfila and Devergie begin in the same way. Of the English authors, Paris and Fonblanque, after a sketch of the progress of the science, in the shape of an introduction, and a historical *hors d'œuvre* on the charter and powers of the Colleges of Physicians and Surgeons and of the Society of Apothecaries, treat of medical liabilities and exemptions, and of medical evidence generally. Gordon Smith, as we have seen, deems the question of sufficient importance to make it the subject of a separate dissertation. Dr. Guy begins his volume by a well-written chapter on medical evidence, to which succeeds one on personal identity; on the other hand, Dr. Taylor plunges at once, *in medias res*, by discoursing on poisons. The first chapter of Foderé's work, following his learned introduction, is on "Ages," the same as that discussed by Orfila. Beck opens with "Feigned Diseases," and Wharton and Stillé with "Unsoundness of Mind." Preference must, we think, be given to the initial course pursued by M. Briand and other French writers on legal medicine, and by Guy of the English ones. It is very desirable that a medical man, who may be summoned to give either oral or written evidence before a court, should know the ground on which he stands—the customs and laws by which he is fenced in, as well as be familiar with the purely scientific matter of which he is expected to speak understandingly, and with a certain degree of authority. Before we proceed, however, to investigate this ground, which we can hardly hope to reach on the present occasion, we shall complete our synopsis of M. Briand's work. We must say, at the setting out on this part of our task, that there is no natural classification of the subjects which properly make up the science of medical jurisprudence. Two writers may start from opposite points, and each claim his own as the most appropriate beginning; as, for instance, Foderé and Orfila, in choosing the "ages" for their initial theme, while Devergie begins with a discussion on "death and its signs." Among the first questions asked are those of the age of an individual who is the subject of a medico-legal inquiry, with a view of determining the privileges, exemptions, and responsibilities which belong to it as well as the point of personal identity—as in the cases of supposititious children, accusations of crime, claims to the possession of property, etc. Looking, on the other hand, at medico-legal proceedings in a criminal point of view, and regard being had to the importance of ascertaining whether, in the case of a person found dead, his death was the result of internal disease or of external violence, of causes purely accidental, or owing to criminal intention, the questions of the various modes in which it may take place, as from organic disease previously known or latent, or from hanging or drowning, and of its determining causes, as well as the period that had elapsed subsequent to its occurrence, assume a primary importance, such as might well justify Devergie for giving to a consideration of them nine chapters of the first volume of his valuable treatise.

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* Alienation Mentale.

† Des Maladies Mentales. In the Abridged Translation by D. E. K. Hunt, that portion of the work on medico-legal relations of Insanity is unfortunately omitted.

[1] Sur la Folie.

[2] De la Folie considerée dans ses Rapports avec les Questions Medico-Judiciaires.

[3] Des Hallucinations, ou Histoire raisonnée des Apparitions, etc.

[4] Du Traitement Moral de la Folie. Also Ann. Hyg. et de Med. Leg. *passim.*

[5] De la Folie considerée sous le Point de Vue, Pathologique, Philosophique, Historique et Judiciaire, etc.

[6] A Treatise on Insanity and other Disorders affecting the Mind.

[7] Inquiry concerning the Indications of Insanity. Also "A Remonstrance."

[8] Medical Jurisprudence of Insanity. [9] Ibid.

[10] Criminal Jurisprudence considered in relation to Cerebral Organization.

[11] Henke's Journal für die Staatsarz neilkunde. 1824.

[12] Médecine Legale, relative aux Alienés et Sourds Muets (Trad. en Franç.) 1827.

[13] Handbuch der gericht. Arzneiw. 1823.

[14] Versuch einer Pathologie und Therapie der Geistes Krankheiten.

[15] Commentatio de Mania sine Delirio. 1827.

[16] Rhapsodien über die Anwendung der psychischen Kurmethode auf Geisteszerrüttungen. 1803.

[17] Lehrbuch de Gerichtf. Arzneiw. 1824.

[18] Psychische Anthropologie.

[19] System der Psychisch-gerichtl. Medicin. 1825.

[20] The Principles of Medical Psychology. Translated from the German by H. E. Lloyd, for the Sydenham Society.

M. Briand divides his work into two parts, viz.: I. Legal Medicine; II. Legal Chemistry. The former is subdivided into four sections; in the first of which, he treats of attempts on modesty and the reproduction of the species; in the second, of attempts against health and life; in the third, of mental affections; and in the fourth, of questions of identity, feigned diseases, and diseases which exempt from military duty. In the second part, of which M. Gaultier de Claubry takes charge, we read, in the first chapter, of an investigation of poisons; in the second, of substances which although not poisonous come within the quest of legal chemistry. This latter branch of the inquiry turns on the use and application of the microscope in a great variety of circumstances in which minute inspection of the physical characters of the blood and of blood spots, and of other fluids of the body, is of the last importance. Following this chapter are examples of reports on different cases of criminal accusation, and on microscopical examinations To these succeed a statement of the laws, decrees, and ordonnances relating to medicine and pharmacy, and commentaries on these laws. This portion of the volume, together with all the jurisprudential matter in the body of it, at the beginning of each chapter, has been contributed by M. Chaudé.

Returning now to the first section of the work of M. Briand, with its somewhat indefinite heading, we find that under attempts against modesty he discusses the important questions of rape, and in that which relates to the reproduction of the species he treats of the causes preventive of marriage; then of pregnancy, abortion, and child-birth; medico-legal investigations relating to delivery, premature and tardy births; the life and viability of newly-born infants; concealment, simulation, substitution and exposure of a new-born child; infanticide; questions growing out of the presumption of infanticide; the course to be pursued by a medical man called to make a report on a case of infanticide.

The second section, being that on attempts against health and life, furnishes three chapters. The first of these is on blows, wounds, and homicide by blows or wounds; also on suicide and duel. It opens with an account of the legislation and jurisprudence touching homicide, blows and wounds; and discusses the questions, whether suicide be a crime punishable by law; and whether the death is the result of a suicide or of a homicide. Wounds are reviewed in reference to the mode of lesion. A separate article is allotted to burns. Wounds are noted according to the part of the body or the organ in which they are seated. Cicatrices are studied in this connection. A juridical examination of wounds is laid down, and in a succeeding article is a notice of stains of blood and cerebral substance, similarly examined. A judicial examination of the body of a person whose death has been the result of suspected violence, forms the subject of a long article, divided into many subheads, such as on the method of making the autopsy; spontaneous lesions which may cause sudden death and give rise to the suspicion of its having been the result of violence; how to distinguish, in a dead body, the lesions inflicted during life from those made after death; how long since has the death occurred; the signs of real death; burials, and disinterments.

The second chapter deals with asphyxia, under the varieties caused by noxious gases, drowning, hanging, strangulation, and suffocation. Chapter third contains an account of homicide by poisoning, including an inquiry into the poisons most generally employed, and the mode of their introduction into the organism; and also into the symptoms and lesions to which they give rise. The first class specified is that of irritant poisons, subdivided into mineral, vegetable, and animal. The second, or the narcotic class, is the next described. The third, or narcotico-acrid, includes several groups, in the first of which figure squills, aconite, hellebore, colchicum, belladonna, stramonium, tobacco and nicotine, digitalis, hemlock, conicine, and the laurel-cherry. In the second, are seen nux vomica and faba St. Ignatii, strychnine and brucine; in the third, camphor and cocculus Indicus; in the fourth, mushrooms; in the fifth, ergot of rye, darnel, and the ranunculaceæ; in the sixth, alcohol and alcoholic liquors; and in the seventh and last group, ether and chloroform. The fourth class gives us septic poisons, such as the sulphydric acid gas, the mephitic air of sewers, etc., and tainted food. The third article of this chapter is devoted to the subject of the autopsy of persons who have been poisoned, and to the necessary investigation for determining the fact of poisoning. Among the questions coming up in this category are those relating to the nature of the soil in which the body was interred, and to the possibility of the arsenic in the soil penetrating into this body; and thus induce a belief of our having to do with a case of poisoning: or the converse supposition, that the arsenic contained in a body which has been poisoned may have been dissolved and carried away by the water which filtrates through the surrounding soil, so as to leave no trace of poisoning. When analyses are necessary they should only be undertaken by chemists qualified for the duty.

The third section of the work before us is on "mental affections." As in the plan of the preceding sections, this one opens with a view of the legislation and judicial decisions on this interesting theme. Then we read of the more marked deviations from the healthy standard of mental soundness, viz.: idiotism and imbecility; and mental alienation, or madness or insanity properly so called, in its varieties of dementia, mania, and monomania. The causes of insanity, as well as the symptoms and progress of the disease, are exhibited. The question, does monomania exclude culpability? is discussed. The passions constitute the subject of an article in which it is asked: Does the bewilderment caused by the passions exclude moral liberty? Next is investigated the influence of certain physiological and pathological states on moral liberty, viz.: somnambulism, the state intermediate between sleeping and waking, febrile delirium, acute delirium, drunkenness, delirium tremens, epilepsy and hysteria, deaf-mutism. The fourth, the heading of which has been already given, opens with the question of identity, and the signs by which it can be ascertained; first in the living, and then in the dead subject. Feigned diseases make up the matter of the second chapter, and the diseases which exempt from military duty the third one.

The Second Part of the work, or Legal Chemistry, first chapter, begins with an investigation of poisons, conducted as follows: The preservation of the matters collected in a case of poisoning; the procuring of vessels, apparatus, and other objects necessary for the search after the poison; the tests and the various substances employed by the experts or regularly appointed medical or scientific legists. In article fourth are passed in review poisonous substances met with in nature. Of these we find certain metals and the simpler metallic preparations, such as antimony and its sulphurets, metallic arsenic and fly powder, copper and its compounds, mercury in its metallic state; and also an elementary substance of a different order—iodine. Next are specified colorless or white solid substances; dry, metallic compounds of antimony, silver, bismuth, tin, mercury, lead, and zinc; acids, including the arsenious, arsenic, and the arsenite and arseniate of potash, oxalic acid, and the binoxalate of potash; alkaline and earthy bases and their salts—ammonia, potassa, soda, and their combinations with acids; organic alkalies, fixed, volatile, and gaseous. The first are, atropine, or elaterine, brucine, codeine, morphine, saponine, strychnine, veratrine; the second include conine or conicine, nicotine, petonine, and picoline. But we find that our remaining space will not admit of an enumeration of the numerous substances spoken of in this chapter, which are somewhat arbitrarily classified according to their color. The sulphates and nitrates of copper, for example, come under the head of solids of a blue color; and sulphuret of arsenic, (orpiment,) certain chlorides, and the iodide of gold and turpeth mineral ranging among the yellow solid substances. A search for poisons in suspected matters, as in the products of vomiting, etc., is described with considerable minuteness: it begins for simple bodies, then for acids, alkalies, and their salts, metallic poisons, arsenic. The nature of deleterious gases is then examined, and the chapter closes by inquiries into the anæsthetics.

The chapter on the tests furnished by the microscope, in the inspection of the blood and blood stains, and of the marks left by other animal fluids, is full and instructive. Another article exhibits the means of ascertaining the nature and the color of the hair and the beard. Fire-arms is the next theme, which embraces an inquiry into the means of determining the period that has elapsed since a fire-arm was discharged. After this we find a description of the processes for detecting the prints left on the ground by the feet, or by carriage wheels, etc.; also for examining the ashes in a particular spot, with a view of discovering the remains of a dead body. Forged writing, and counterfeit coins, and imitations of the precious metals, are the subject of an article in this rich chapter, which terminates with a detail of various matters for the exercise of the science and ingenuity of an expert, as they come before the minor courts, such as, for instance, alteration and adulteration of flour, bread, wines, vinegar, and milk.

Civil cases, ranking properly under the head of nuisances, are examined and detailed in their medico-legal bearings. Some of the cases are singular enough. The owner of a cow-house brought suit against a sugar refiner, on the plea that the water of the establishment of the defendant affected his (the prosecutor's) well. On examination, it was found that the infected water had a very decided odor of cow's urine, which became still more evident by evaporation to a syrupy consistence. By further treatment, oxalate of lime and urea were obtained. It was evident, therefore, that the offensive water of the well was caused by infiltrations from the cow-house into the yard of the complainant, and not from the water of his neighbor's premises. Many questions come up in business dealings which can only be adjudicated after the testimony borne by a chemist who has made the requisite examination; as, for example, in the case of the owner of a house who had employed a person to repair it, the painting was to be in oil, and of three coats; but it was alleged by the landlord that only one coat of oil had been put on over a sized coat. M. Gaultier de Claubry, the expert, on this occasion scraped off the painting from a certain number of points, and placed each specimen in a paper duly labeled. Each portion of the painting was then treated by heat with ether to dissolve the oil, which was obtained by spontaneous evaporation; the residue was boiled with water, which extracted the gelatine, and this was afterwards obtained by evaporation. The new insoluble residuum was composed of carbonate of lime. The fact of the sizing being proved, it would be easy to tell with some certainty whether one or two coats of this size have been put on. This knowledge is derivable from the proportionate quantities of oil and gelatine.

In further proof of the necessity of admitting chemistry as a branch, under the title of "legal medicine," but still related to medical jurisprudence in its larger signification, M. Gaultier de Claubry adduces instances of the aid furnished from this source in various questions relating to the public health, but which do not strictly come under medical supervision. We may repeat after him some of these. In hearing of the escape of the foul waters from the cistern of a gasometer which was not sufficiently tight, and their infiltration into places around, the question is, not to ascertain their effect on the animal economy, but to point out the remedy for this condition of things. When a manufactory of oxalic acid diffuses nitrous vapors through the atmosphere, which are known to be hurtful to the neighborhood, the mode in which their condensation is to be effected is the sole question. A manufactory of fulminating mercury and priming is established at a certain spot: the conditions to be fulfilled, so that the neighborhood shall be put to the least inconvenience from it, are the points for examination. Particular processes are had recourse to for the emptying of privies and the removal of their contents. Here there is no question respecting the action on the animal economy of the gases given out from these receptacles and their contents; it is only to ascertain whether the means proposed for the purpose obviate the resulting inconveniences. The last example coming under the present head presents points of great practical value, in relation to the deleterious changes which may take place in the staff of life. All at once, in the year 1840, and without any known cause, the bread of the military bakeries, for the soldiers of the garrison of Paris, was found to be covered with red spots of a decided hue. This bread soon emitted a disagreeable, and even sickening odor, and it was unfit to be sent out for consumption. But few examples of this nature were met with in the civil bakeries. The change, it was ascertained, was owing to a mushroom of the genus *oidium*. On examining the circumstances under which it was found, the author was led to search in the flour itself for the sporules of the mushroom, and he found them. The cause of the alteration being known, the next point was to remove or destroy it; and accordingly various means presented themselves for the purpose, viz., the mixture of the inferior flour with that of a superior quality; the preparation of harder biscuit, longer worked; baking in an oven at a lower heat; exposure of the baked bread in the open air, in place of immediately stowing it away as had been the ordinary practice. By the employment of these means the deleterious change was prevented.* We are sorry that occasion is given to us for repeating the brief remark of M. Gaultier de Claubry, which follows the preceding statement. It is, that "subsequently a commission appointed by the minister of war pointed out the same results, without even mentioning my publication on the subject."

The latter portion of the rich volume before us consists of examples of reports on different cases of actual or alleged crimes, for the proof or detection of which, as far as relates to injury to the health and to loss of life, a medical jurist or a chemical expert was consulted; then of the laws and regulations relating to medicine and pharmacy, and the commentaries on these laws. In availing ourselves of the facts and reasonings in these matters, we ought to connect them with the details furnished in the Introduction, relating to the initiatory steps and subsequent course to be taken by the constituted authorities and law officers, for procuring the co-operation of medical men. We could not well undertake to follow our author in these interesting topics, without engaging to a certain extent in a discussion of the modes of procedure carried out in different countries in medico-legal investigations. The subject is more than merely curious; it involves questions of great moment, and merits a larger treatment at our hands than would be possible so near the conclusion of a paper which has already reached its originally assigned limits. It would be necessary, were we to open out the subject, to begin with a comparison of the crude proceedings according to the law of coroner, as received in England and in this country, with the system of expertise in France and that of the Supreme Medical and Sanitary Council, and the *Staats Physicus or kreis-Physicus*, in most parts of Germany. We cannot, however, close without a few practical lessons, equivalent to clinical instruction, when teaching the theory and practice of medicine, as we find them in the shape of reports contained in M. Briand's volume.

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* Annales d'Hygiène et de Médecine Legale, xxxiv. 347.

Our first selection will be of a Report on a case of hanging; "suspension," as it is termed in the French idiom:—

We, the undersigned,* in order to ascertain the kind of death of M. H., who is said to have hanged himself this very day, at five o'clock in the morning, having arrived at said spot, where we found the commissary of the police, were introduced into a dimly-lighted room, on the ground floor, in which there was hung from a bar of iron, raised about 2·60 metres (8 feet 6 inches) from the floor, a body which we were told was that of M. H.

A smooth rope, of the thickness of a finger, made a running noose tightly drawn round the neck. The tie of this rope was placed under the right side of the chin, the head was thrown far back, and inclined in such a way that the occiput was brought near to the left shoulder, and the head was turned upward and to the right side.

The posture of the body and the degree of constriction of the running noose are proofs that this individual had cast himself off with force from a chair which was found upset at another end of the room.

After having assured ourselves, by an examination of the room, that there was nothing to furnish any pertinent evidence, we cut the rope near the end which was tied to the iron bar, and had the body removed to a better lighted place, in order to proceed to a detailed examination.

I. The face and lips, instead of being swelled and of a blue or violet color, as they are for the most part in persons who have been hanged, were, the first pale, and the last colorless.

II. The eyelids of the left eye were closed, and those of the right eye half open; the pupils were greatly dilated; the eyes neither injected nor prominent.

III. The tongue was thrown backward and drawn into the pharynx.

IV. A little frothy mucus issued from the nose and mouth when the thorax was compressed.

V. After having removed the rope, we observed a horizontal sulcus or furrow, nearly circular, and about 16 or 17 millimetres in depth, and the skin of this part of a yellowish hue and dry, like parchment.

VI. The hyoid bone was fractured, and thrown far back by the pressure of the rope.

VII. There was no ecchymosis either above or below the furrow, nor in the super or sub-hyoidean muscles; but after having removed the integuments of the posterior part of the neck and trapezius muscle, which was entire, we found extensive infiltration in the splenius, the great and smaller complexus, the transverse, and the spinal transverse muscles: the cervical ligaments were entire, but stretched; the cervical vertebræ were neither fractured nor at a greater distance from one another.

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* In making a judiciary report, the expert, or regularly enlisted medical jurist, or other person summoned on the occasion, gives his prename and surname, and his titles and professional position.

VIII. The integuments of the cranium, the bones, and the organs contained in this cavity, showed not the slightest trace of lesion. The cerebral substance was only a little redder than in the natural state.

IX. The larynx and the trachea contained a bloody mucus. The lungs were free from all adhesions, and were very crepitant; they were gorged with dark and fluid blood, as were also the right cavities of the heart; the left cavities of this organ were entirely empty.

X. The abdominal viscera were in their normal state, with the exception of the stomach, which exhaled a strong alcoholic odor: its mucous membrane was inflamed, doubtless owing to the abuse of strong drinks, to which, we were assured, the deceased had been for a long time addicted.

XI. The penis was in a state of erection, and that part of the shirt in contact with this organ exhibited moist and yellowish spots, spots caused by the semen which had been ejaculated, as evinced by the odor and as we have already shown. (Page 769, *et seq.*)*

CONCLUSIONS.—Although the body subjected to our examination has neither presented that apoplectic state which authors have specified among the signs of death by hanging, nor that projection of the tongue, nor that prominence of the eye which are often remarked in such cases, the absence of these signs is not a sufficient reason for our doubting that the death was the result of hanging. The fracture and retroversion of the hyoid bone seem to us to account both for the retraction of the tongue and the presence of less blood in the encephalic vessels, which were closely compressed. We believe, consequently, that the circular mark, and the numerous ecchymoses, of the presence of which we assured ourselves, (VII.,) the quantity of dark and fluid blood in the lungs and in the right cavities of the heart, the vacuity of the left cavities of this last-mentioned organ, the erection of the penis and the ejaculation of semen, furnish proof that the individual submitted to our examination did really perish by hanging.

In proof of which, etc., etc.

The only criticism we have to offer at the moment on the above report is on the use of the word inflamed. The term inflammation is an abstract one; the phenomena constituting that state do not present themselves to all in the same light. It were better, in such cases, to specify the appearance of an organ and then add, "as if inflamed." We may beg the use of the word in pathological inquiries, but it is hardly admissible in circumstances of pure description, where we wish to convey to the mind of another person—and he, perhaps, not initiated in the language of science—a definite idea of actual appearance or occurrence. In another "report" on a case of death from hanging, no ecchymosis was met with under the sulcus caused by the rope; nor was there any laceration, or solution of continuity of the hyoid bone, or the larynx or trachea.

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* The details on this point will be given in the next "Report."

Our next selection is of "Reports on a case of Rape, (*defloration,*) with violence."

First Report—Examination of the complainant:—

We, the undersigned, N., doctor of medicine of the Faculty of Paris, living in —— street, on the requisition of M., the procureur imperial, and after having taken an oath before this magistrate to make our report and give our opinion on our honor and to the best of our belief, went this day, Tuesday, the 28th of October, 185–, in —— street, number ——, accompanied by the commissary of police of the quarter of ——, for the purpose of visiting the daughter of Mr. M., who is represented to have been ravished and deflowered on Sunday, the 26th, at eight o'clock in the morning.

Mr. M. showed us his child, aged twelve years, who complained of sharp pains in the genital organs, the thighs, and lumbar region. He told us that, on Sunday morning, Mr. E., aged twenty-five years, had enticed her into a room in the story below, and had subjected her to violence, in spite of her resistance; that his child had not been affected previously with any catarrhal complaint; that she had not yet menstruated, but that she enjoyed, habitually, good health, as seemed to be evinced by her appearance.

M. showed us the shift which she wore at the time when the violence on her person was committed, and we noticed on it stains of different substances which we reserve for examination.

Proceeding at first to the inspection of the young girl, we ascertained that she is of a middle height, of ordinary plumpness for her age, and of a good constitution, and that there is nothing in her physiognomy to indicate vicious habits.

The sexual organs, regularly formed, exhibit the following appearances:—

I. The external labiæ, slightly apart from one another, are red and swollen on their internal surface; the inner labiæ are much tumefied, very red, and covered with purulent mucus of a yellowish-white color, which flows more abundantly from the vaginal orifice when we press on the perineum, but not at all from the urethra.

II. The clitoris is but little developed, and the fourchette is entire.

III. The membrane of the hymen is torn from above downward, and the torn edges form on each side of the entrance into the vagina, which is sensibly enlarged, a projecting fold, with borders unequal, red, swollen, and slightly excoriated.

IV. We observe, besides, at the inferior and internal part of the thighs, and on the right forearm, contusions which seem to us to have been made two or three days previously, as were the injuries done to the sexual organs.

From these observations we believe that we may infer:—

1. That the young M. has been recently deflowered. (III.)

2. That the introduction of a virile member, or some body or another, has taken place, in spite of the lively resistance on the part of the complainant. (II.)

3. The state of health, the general habit of body, and regular conformation of the sexual organs, render improbable the existence of a catarrhal affection and of vicious practices; the discharge from these parts appears to us to be only attributable to violences of such as this young girl alleges she was the victim.

These presumptions of rape, already so weighty, resulting from the state of the girl M., will acquire a high degree of certainty if an examination of the stains on the shift show that they are caused by semen.

Accordingly, the said shift has been made up into a package, and fastened with cord, to which has been affixed the seal of the commissary of police, in order that a chemical examination may be made of the stained spots.

We certify to this report being made in sincerity and truth.

At Paris, day, month, and year above mentioned.

(*Signed.*)

Second Report—Analysis of the stains of blood and semen:—

We, the undersigned, A. C., chemist, etc., directed by an order of M., the judge of instruction, D., dated the ——, to the effect that, conjointly with M., the Doctor N., we should proceed to an analysis of the stains on the shift which was worn by the girl M. at the moment when, according to her declaration, violence on her person was committed, and determine the nature of these stains; an oath having been previously taken by us before this magistrate, we received from him a package containing the said shift, and we adjourned immediately to our laboratory, where, in concert with Doctor N., and in presence of Mr. M., the father of the young girl, who recognized the identity of the seals, we have ascertained—

That there were on the hinder part of the shift a great number of stains, occupying about 20 square centimetres, and seeming to be made with pure blood, or that slightly mixed with serosity; that several other smaller spots, elongated and of a brownish-yellow color, were evidently made by fecal matters.

That on the front of the shift, at its lower and middle part, there was a yellowish-gray stain, 7 or 8 centimetres in diameter, and some other smaller ones of the same appearance; that the linen had at these parts a greater consistence than common, and, as it were, starched; that the odor had in it nothing characteristic.

We then proceeded to the chemical operations necessary to determine the nature of these stains:—

1. Two of these stains, which seemed to be made by blood, were cut into several pieces, then introduced into distilled water in a close tube, which was so arranged as to be immersed in the fluid without touching the bottom or the sides of the tube. At the end of about two hours' maceration, reddish streaks, formed by the coloring matter, were deposited, and imparted a red color to the lower part of the fluid; the linen, which was discolored, exhibited only a very thin coat of soft grayish substance, somewhat elastic, soluble in potash, and this last in solution gave, by chlorine and a little chlorhydric acid, flocculi of coagulated matter, a union of phenomena which characterizes fibrin.

The liquid in which the coloring matter was deposited, on being filtered, (on a small filter previously moistened,) and then heated gradually by the flame of a spirits of wine lamp, became turbid and discolored, at the same time that there were formed reddish-gray flocculi. Two drops of a solution of potassa having been added, these flocculi disappeared, the liquid became clear and presented *a greenish tint seen by reflected light, and a reddish tint by refraction;* then, in passing a current of gaseous chlorine through the liquid and pouring on it afterwards some drops of chlorhydric acid, the albuminous flocculi were again formed; phenomena these which the coloring matter of the blood could alone produce.

2. The front part of the shift, the yellowish gray and pasty spots of which seemed to us to be caused by semen, was cut into small pieces. One of the stained pieces, subjected to great heat, assumed a more decidedly yellowish (yellow-fawn) tint. Two other pieces were placed in the upper part of a test tube containing distilled water, which was heated to the point of ebullition; the linen moistened by the vapor gave out a strong spermatic odor, blended with a weak smell of lye. Four other pieces were introduced into a small closed tube, 22 millimetres in diameter, holding distilled water; after three hours of maceration, the liquid, like the linen, exhaled a spermatic odor, and these pieces of linen were sticky. After squeezing out all the fluid they were dried by a moderate heat, and became again firm and slightly starch-like.

The fluid in which the maceration took place was cloudy, and contained small filaments, which we ascertained to come from the linen; although filtered several times, (the filter having been previously moistened,) it could not be obtained in a perfectly limpid state. The residual filtered liquid, put into a watch-crystal, and this into a sand-bath, and evaporated by a mild heat to the point of desiccation, gave out more and more a spermatic odor, and deposited a glutinous substance, which formed on the surface of the glass a shining and transparent lining. A little distilled water poured on this coat and agitated with a glass rod dissolved only a part of it. The insoluble portion, which was adherent to the end of the rod, on being heated by a solution of potash, was completely dissolved. The water charged with the soluble portion treated *by alcohol* was but slightly disturbed; another portion treated *by nitric acid* exhibited a barely sensible cloudiness. These two last tests, particularly, proved to us that the matter submitted to analysis was really semen, for alcohol precipitates abundantly the other liquids of the secretions, and nitric acid gives rise in them to flocculent precipitates, which for the most part collect at the bottom of the vessel.

Finally, in order to obtain a more complete proof of the presence of semen, we had to determine, by the aid of the microscope, the presence of the essential elements of the seminal fluid. We cut off from the stained part of the linen a strip of about a centimetre (nearly five lines) in width, the end of which we dipped in pure water contained in a watch-glass; the fluid soon rose, by virtue of capillary attraction, on the strip, and moistened the stain, which swelled up, and then gradually regained its thickness and the appearance which it had when in its original state.

At the end of half an hour we scraped very lightly with a scalpel the swelled stain, and the matter thus detached from it was placed on the object-glass of a microscope; we brought it to a state of somewhat greater division by agitating it in a portion of pure water, and then placed it under the microscope. We observed at first small whitish filaments coming from the tissue of the strips, and which were removed by the scraping; and then, in the middle of irregular corpuscles of multiform granules, we were able to see distinctly the spermatozoa; some of them entire, grayish and transparent, and of the length of about 5 to 6 centimetres of a millimetre, consisting of a large and somewhat flattened head and a long cylindrical appendix, narrower and becoming thinner from its point of origin; others broken up, but still easily recognized by the form and aspect of their head.

From the preceding facts and experiments, we conclude—

1. That the stains on the hinder part of the shift of the girl M. are made, some of them by fecal matter, and almost all of them by blood mixed with a little serosity.

2. That the stains observed on the front part of the shift are owing to semen.

We certify, etc.

These two practical lessons, in the form of "Reports," showing the manner of proceeding which the science now exacts of medical legists, form a suitable termination to the history and outlines of medical jurisprudence, such as we have endeavored to trace in these pages. We should have looked to an indefinitely future time for furnishing us with an opportunity to bring out, with some degree of prominence, certain cardinal questions yet untouched, did not immediate occasion offer itself, which demands an early resumption of the subject, as a matter of justice to the requirements of American literature. After we had made considerable progress in the present article, and shaped its chief features, we were favored with nearly a perfect copy, in sheets, of a new edition of Beck's Medical Jurisprudence, from the press of J. B. Lippincott & Co., which, in its entireness, will probably be issued as soon as the forthcoming number of our Journal. Of the general merits of this work we have spoken in a preceding page. It will be our duty, at an early day, to enlarge on these, and thus be enabled to handle a variety of topics of practical and abiding interest in a science which has not gained due attention from medical men, nor enlisted the services of the governors and teachers in our medical schools, notwithstanding its rich literature, its rapidly growing importance, and the frequent calls for a knowledge of its principles and an application of its details.

ART. II.—*The Diseases of the Stomach. With an Introduction on its Anatomy and Physiology; being Lectures delivered at St. Thomas's Hospital.* By WILLIAM BRINTON, M.D., Fellow of the Royal College of Physicians; Lecturer on Physiology and on Forensic Medicine in St. Thomas's Hospital; Physician to the Royal Free Hospital. 8vo., pp. 406. London: John Churchill, 1859.

SHAKSPEARE justly calls the stomach "the storehouse and shop of the whole body." If one organ can be said to be more important than another, we may fairly regard the stomach as the fundamental portion of that complex apparatus whose great function is to provide for the nutrition of the body. It is through the agency of this organ that nutritive material is prepared and supplied to all parts of the economy. It is not only a reservoir for crude alimentary substances, but a laboratory also, in which these materials undergo that change which is necessary to their subsequent assimilation by the blood and tissues. The stomach is the *fons et origo* of the living blood. If its actions be deranged, the life-stream is injuriously affected at its very source. The functions of the stomach are every day being impaired by various circumstances and in various ways; sometimes temporarily and to a slight extent, sometimes chronically and in a serious manner. Partly on account of their inherent importance, and partly because of their influence upon, and intimate relations with, all other maladies, gastric diseases occupy an important place in the nosological scale. Their importance, however, is not due to their frequency and special pathological relations only, but to their obscurity, to the defective knowledge which we possess concerning them, and to the difficulties which surround their study. It is not easy to ascertain the physical condition of the stomach during life. We cannot see it, we cannot distinctly feel it as we can the liver and the spleen; nor can we inspect its secretion, as we can the urine, in a separate and unmixed state. The aids to diagnosis afforded by auscultation in the diseases of the thoracic viscera, and by chemistry in those of the urinary apparatus, scarcely find any parallel in the maladies of an organ which executes its work without perceptible sound or movement, and only dismisses its product from the body after a complex series of changes and admixtures. Hence we are compelled to infer the nature of gastric disorders, not so much from physical evidence, as from the functional disturbance to which they give rise. But the functions of the stomach, as has been well observed, are more readily deranged than those of any other secreting organ, and by a greater variety of conditions. Irritation of the brain, the passing of a gall-stone, obstruction of the bowels, disease of the kidney or of the uterus, will cause vomiting as frequent and distressing as organic disease of the stomach itself. Any sudden emotion, a febrile condition, however induced, various unhealthy conditions of the blood, will suspend or derange the secretion of its solvent juice. Again, the morbid anatomy of the gastric mucous membrane has made less progress than that of some other portions of the body. In the brain, the liver, or the kidney, in the peritoneal, pleural, and other serous membranes, we can readily detect, by post-mortem examination, the traces of the inflammatory action which may have destroyed the life of a patient; and we may, from the careful study of these traces, obtain much valuable information relative to the morbid process of which they are at once the results and the indices. In the gastric mucous membrane, on the contrary, the evidences of disease are, for the most part, more evanescent, and the diseased products effused upon the surface are so intimately mixed with the normal fluids of the stomach and intestinal tract, and with food, drink, and medicine, that they furnish us with very unsatisfactory information of the pathological condition of the membrane upon which they were discharged. Another difficulty in the study of diseases of the stomach, and one which receives but a brief notice at the hands of our author, but is examined at some length in the excellent treatise of Dr. Budd on the "Organic Diseases and Functional Disorders of the Stomach," is the fact that "the stomach presents various appearances, independent of disease, according to the condition of the person when death occurred, and the time of year, and the mode of death, and the time after death at which the body is examined; and several of these appearances are very like the products of diseases, and have, indeed, been generally confounded with them." The frequency and curability of gastric disorders, and the facility with which their symptoms are often recognized, though undoubtedly favorable to the acquisition of information, have nevertheless, as it would seem, misled rather than facilitated stricter pathological inquiries; and have thus rendered our knowledge of diseases of the stomach diffuse rather than profound, and useful rather than accurate.

To diminish this obscurity, and to add to the existing knowledge of these diseases, is the avowed object of the work before us.

This work consists of a series of six lectures, five of which were delivered before "an audience composed of the more advanced students of St. Thomas's Hospital;" while the remaining one (Lecture VI.) was originally "read as a paper before the Physical Society of the same hospital during the session of 1858." To these lectures is prefixed a summary of the anatomy and physiology of the stomach, derived from the physiological lectures of the author, and illustrated with some engravings drawn on wood by himself.

Passing over the anatomico-physiological introduction, we come to Lecture I., which is entirely occupied with the symptomatology of gastric disease. The prominent symptoms of gastric derangement are pain, eructation, regurgitation, vomiting, hemorrhage, and flatulence. These are considered by our author in the order just mentioned, and in a brief but practical manner.

Pain is one of the most striking of the abnormal phenomena exhibited by the stomach, and oftentimes the first to arrest the attention of the patient. It is well known that the stomach is not endowed with that common sensibility which is so well marked in the skin, and which enables the latter to appreciate with such accuracy the mechanical and thermical properties of bodies. Sensibility of this kind in the stomach would be abnormal. Only two sensations appear to be referable to this organ in a state of health—the feeling of hunger periodically calling for food, and of comfort or satiety following its ingestion. The popular notion that a healthy person ought to be unconscious of having a stomach is strictly correct. "The substances he eats and drinks may range from a warmth of 120° to a cold of 32° F.; and may differ scarcely less widely in their physical properties and arrangement. But when once they have traversed his œsophagus, and reached his stomach, these peculiarities are utterly beyond his recognition." Though the stomach is devoid of all common sensibility, it possesses, nevertheless, a special sensibility of its own, and one which, to a certain extent, is independent of the cerebro-spinal centre.

> "Closely related to this centre by the feelings of hunger and satiety—nay, more, dictating to it (so to speak) those exertions which the proper alternation of these two states imperiously demand from the mass of mankind—it has a sphere of action altogether its own. And the study of digestion has shown us how admirably and silently the stomach fulfills its various and complex tasks; and how, incidentally to these, the unfelt particle of food no sooner touches its mucous surface, than it excites the flow of a variety of secretions, both far and near, and provokes movements in the muscular substance of its walls and vessels, as well as in the analogous structures of neighboring parts. To these acts, which respectively constitute the sensation and motion of the healthy stomach, its morbid states afford an instructive parallel. And just as the kind of sensibility specific to a healthy muscle—the feeling of its strength, its equilibrium, its measurable force—seems to be traceable, by gradual modifications, through healthy fatigue to the feverish soreness of over-exertion, and through this to the universal muscular pain and prostration of various grave general ailments, so the indistinct sensation of the healthy stomach affords us the best clue to the acute sensibility of the diseased one; and allows us to trace a scale of similar kind—from satiety to repletion; from repletion to distention and weight in the epigastrium; and from hence to the dull, heavy aching of dyspepsia, the gnawing or burning pain of ulcer, and the sharp agony of cancer of the stomach."

Though pain originating in the stomach is often referred to distant organs, as is exemplified in cases of toothache and headache dependent upon irritation of the stomach, yet in the majority of instances it is seated in the epigastric region, and is felt there by the patient. This pain is very protean in its character. "It is often absent when we might fairly expect it to be present; present when we have no clue to any local cause for it; variable or intermittent without any assignable reason; and lastly, even when there is a definite and circumscribed lesion, gives but a wide and indistinct indication of its place, or perhaps refers it to a point of the abdominal surface much above or below, to the right or to the left of its true situation." The indistinctness of the pain is chiefly due to the fact that the stomach is connected with the cerebral perceptive centre by collateral nervous communications and intervening ganglia or independent centres, such as render the transmission of the stimulus far less certain, and its modification during this transit far more probable than would be the case in a stimulated cerebro-spinal nerve. It is due also in part to the situation of the stomach; to the number of organs with which it is in contact; and to the frequent displacements which their movements and its own permit. The exact situation of the stomach is, to a certain extent, altered, and the area of indistinctness of pain thereby increased, by every movement of the heart, lungs, diaphragm, liver, intestines, etc. Besides, as is well remarked by our author, in pointing to the epigastrium the patient is pointing to a kind of focus, formed by the convergence and attachment of a number of important organs, and hence liable to be occupied by the pain which the lesion of any one of them can produce. Pericarditis, pleurisy, gall-stones, hepatic abscess, diaphragmatic lesions, emphysema of the lungs, and a variety of intestinal causes, such as obstruction of the small intestine occupying the right iliac fossa, are all capable of producing what is, strictly speaking, pain in the epigastrium, and, therefore, so far simulative of gastric disease.

Among the most obvious and important causes of gastric pain are undue distention of the stomach, produced by pyloric obstruction, flatulence, etc.; local injury, eroding branches of nerves and irritating their severed extremities, as in gastric ulceration, cancerous deposits, etc. Dr. Brinton thinks that the immediate cause of gastric pain is undue distention of the vessels, irritating, stretching, or otherwise injuring the nerves distributed upon and within their coats. The great changes of calibre which the arteries and veins of the stomach undergo so often, in the sudden transitions of this organ from rest to activity, and *vice versâ*, are doubtless mediated, he thinks, by nerves which supply their muscular coats, and have so far a motor function. He maintains that the violent gastric pains which sometimes occur quite independently of any perceptible lesion, and even (if we may trust the microscope) of any interstitial exudation, are best explained as provoked by a physical irritation or injury of nerves—perhaps sometimes a mere excess of their natural stimulus—infringing rather upon the nerves of submucous situation, distributed to the small arteries and veins of the stomach, than upon any ultimate nervous ramifications in the secretory structures themselves.

The true value or significance of gastric pain is dispatched by our author in the following brief but judicious language:—

> "The pain of gastric disease is grave, in proportion not only to its severity, but also to its concentration and fixedness. In other words, a severe and continuous pain, confined to a single spot of small size, is a more serious indication than one which, at times of equal (or nearly equal) severity, fluctuates in its different

attacks, and ranges the epigastrium, of which it habitually occupies a wide area. Pain is graver in or near the median line; not only because (for many reasons which will readily suggest themselves) it is, *cœteris paribus*, more certainly gastric here than elsewhere, but because this situation (at least such is my opinion) indicates a more serious derangement of the innervation of the organ than where the pain has a less exact correspondence with the solar plexus. Lastly, of all situations, a median and dorsal one (in anatomical language rachidian, and ranging from interscapular to lumbar,) which is usually an addition and complication to a previous epigastric pain, is the most serious: so much so, that it will rarely be found associated with any but the graver gastric dyspepsias; and belongs chiefly to deep ulcers, or to cancerous lesions of the stomach, involving all its coats.

"In all cases it is essential to add the information obtainable by pressure to the mere sensations complained of by the patient. It is rarely that severe or continuous pain affects the stomach without being associated with some soreness or tenderness to pressure. But when pain is sudden and temporary, and is attended with much flatulence, it is often relieved by gentle pressure. Hence the occurrence of either modification in any given case is capable of greatly influencing our opinion as to the nature of the pain. For, aided by a strict physical examination of the existing state of the stomach in respect of size and situation, it sometimes definitely refers to this organ a pain which, in its absence, could only be conjectured as gastric. In many cases, too, tenderness does far more. According as it is moderate or excessive, superficial or deep, localized or diffuse—features the due recognition of which often imply great delicacy and skill—it justifies a conclusion, not only as to the nature of the gastric malady, but even as to its seat; distinguishes, for example, general inflammation from ulceration or dyspepsia, or a lesion of the peritoneal from one of the mucous coat."

The act of vomiting, the next of the symptoms indicative of gastric disorder, occurs through the intervention of the cerebro-spinal centre, and, as regards its causes, is divisible into two kinds or varieties. In one the irritation provoking the act originates at the nervous centre as in cases of cerebral injury or disease, or mental emotion; in the other, it arises at the periphery, and is thence transmitted to the centre, to be reflected upon the various organs which are concerned in the expulsive effort. Irritation of the fauces, intestines, or peritoneum; disgusting sights, sounds, or smells; prolonged immersion in cold water; and even wounds of the extremities are productive of this kind of vomiting.

"Among the vomitings produced by gastric derangements, we may distinguish the following varieties: Firstly, the vomiting brought about by sheer destruction of tissue, involving an abnormal irritation of the nerves laid bare at the seat of lesion; a variety exemplified in simple and malignant ulceration, in wounds of the stomach, in corrosive poisoning, and characterized (as might be expected) by a remarkable amenability to the physical or chemical properties of substances brought into contact with the injured nerves, (as in the ingestion of food.) Secondly, the vomiting of obstruction, which is referable not so much to the mere obstruction as to the distention and violent muscular movement which is gradually brought about behind the occluded part, and which therefore varies, not only with the strictness of the occlusion, but with its proximity to the pylorus, its superficial extent, its disposition relatively to the muscular coat, and other circumstances of this kind. This variety of vomiting is often seen in cancer and (a still better example) in cicatrized ulcer of the stomach. Thirdly, a kind of vomiting in which the gastric distention present appears mainly referable to a loss of contractile power by the muscular coat of the stomach, (the structure of the organ remaining unchanged,) and in which we must often doubt whether this failure of contractility is not caused by some nervous lesion itself answerable for the vomiting—whether, in short, the distention of the stomach is simply concurrent, or really causative in the process.

"Such allusions to the nature of vomiting may end by the general statement, that, just as it is the kind of vomiting which dictates its treatment—so that, for example, the cerebral vomiting of sea-sickness is often relieved by food and stimulants, the vomitings of phthisis by whatever will diminish or mitigate cough—so the vomiting produced by gastric derangement is most accessible through the function of the organ: in other words, is most amenable to a treatment regulating the quantity and quality of the food, and the frequency of its ingestion."

Hemorrhage, of itself, is by no means a reliable symptom of disease of the stomach. Blood in larger or smaller quantities may be discharged by vomiting from the stomach, or may escape from the intestinal canal, *per anum*, and appear in the fæces without being at all indicative of gastric lesion. The blood which is thus ejected from the economy may have found its way into the alimentary canal as the result of epistaxis, hæmoptysis, gall-stones, hepatic cysts, lesions of the pancreas, etc. It may have escaped from the vessels of the digestive tube in consequence of some mechanical obstruction to the portal circulation produced by cirrhosis of the liver, by tumors or deposits compressing the portal vein, etc. Great care, therefore, is often required in tracing the so-called hæmatemesis or hæmatokopræsis to its proper source and cause. On the other hand, a slight and intermittent hemorrhage into the stomach so often depends on casual circumstances for its detection, that we can never presume its non-occurrence because its results have not been observed. Nothing indeed but a constant and sedulous observation of the gastric and intestinal evacuations affords any valid conclusions of this kind.

In noticing the causes of gastric hemorrhage, Dr. Brinton repudiates the old doctrine of hemorrhage "by exhalation" through the coats of the vessels independently of any solution of their continuity. It is very true, as he remarks, that the finest capillaries have no pores of appreciable magnitude such as would be necessary for the transit of blood-corpuscles. But a passive hemorrhage may be, and in fact is sometimes, due to an exceedingly diffluent state of the blood—the corpuscles escaping not as entire structures, but in a fragmentary or broken-down condition, and mingled with the hæmatin or coloring matter. Such a phenomenon we witness in some varieties of purpura hemorrhagica and scurvy, and in the ecchymoses of malignant fevers. The blood in these cases exhibits under the microscope but few or no red cells.

Scanty extravasations of blood take place in the stomach with great facility, and are attended with but little risk to life. Large effusions of blood, on the contrary, though of rare occurrence, are very dangerous. In explaining these peculiarities, our author points out with care the intimate connection which exists between the anatomy of the vessels of the stomach and the phenomena of gastric hemorrhage.

"The capillaries of the stomach, it will be remembered, are of two kinds: deep, inter-tubular, or gastric proper, as we may call them; and superficial or supra-tubular, which adjoin the general cavity of the organ. In rare instances, the former seem to constitute the chief or exclusive source of hemorrhage, so as to fill more or less of the blind end of a stomach-tube with blood. But hemorrhage is far more commonly confined to the latter—to those complex rings of capillaries which surround the open mouths of the stomach-tubes, and directly underlie the ridges and papillæ intervening between their orifices. These vessels, extremely numerous, and possessing a size and arrangement such as renders them almost intermediate between true capillaries and veins, seem to be peculiarly exposed to the ordinary causes of extravasation. They evidently have all that liability to congestion which belongs to the commencement of the venous part of the circulation throughout the body. They have a situation which requires them to bear the brunt of the various agents introduced into the human stomach in the food. And their delicate membranous wall is only shielded from the physical and chemical action of these agents by a layer of columnar epithelium; the removal of which, though doubtless strictly abnormal, must at any rate be a frequent accident in the history of the digestive process. Indeed, if we think of the incidents of a single meal—the fluids and solids; the animal and vegetable substances; the peppers, acids, wines, liqueurs, spirits; the frozen and scalding, the hard and soft matters which are sometimes brought into rapid and successive contact with the gastric mucous membrane—(and this, too, at a time when the process of digestion itself implies a state somewhat akin to congestion, in so far as it distends and thins these delicate vascular and epithelial structures)—we can easily understand that (as Dr. Beaumont's observations indicate) the soft columnar cells may be here and there stripped off, and the subjacent vessels here and there distended and ruptured, by a casual debauch or dyspepsia, to be restored by a few days of abstinence or temperance to their pristine perfection.

"Little, therefore, can be concluded from the detection of a small quantity of blood in the matters rejected from the stomach of a patient. However suspicious a circumstance, it is only by careful collation with other symptoms that it materially influences diagnosis. It proves a solution of continuity in the vessels yielding it; but leaves us to determine whether this rupture is due to vascular obstruction, to congestion, to desquamation, or to ulceration.

"In larger quantity, gastric hemorrhage has not only more gravity, but a more definite import. Thus, sometimes it presents sufficient of the characters of arterial or venous blood to justify its reference to a vessel of one or other of these two kinds. And even more frequently it shows, by the clots it contains, that it must have been effused rapidly, either from one or two large, or from numerous small vessels. In other cases, it presents the peculiar black color and tarry consistence which blood assumes by exposure to the digestive juices. Since this change of color requires a certain time, as well as a certain amount of these juices, to produce, its occurrence in vomited blood generally indicates that the hemorrhage has either been slowly effused, or is of but moderate amount. In blood discharged from the stomach by the bowels, of course no such rule will obtain; indeed, such a hemorrhage will rarely fail to exhibit somewhat of this tarry color and consistence, unless its quantity have been excessive, or its transit through the intestinal canal unusually rapid. The detection of hemorrhage is sometimes rendered difficult by the admixture of blood with other substances of similar appearance: especially with various articles of food, and with more or less altered bile, occasionally even with morbid products. A careful examination will, however, generally clear up any obscurity of this kind. Indeed, a mere dilution of the inspected matters with water usually suffices; or, if not, a microscopic examination rarely fails to decide the question."

Our author next treats of flatulence, another and a very distressing symptom of gastric disease. The gases found in the stomach and intestines are referable to a variety of sources. Air is habitually introduced into the alimentary canal from without the body, by some persons, voluntarily, as an act of deglutition or eructation; by all persons, in the ordinary act of swallowing, probably in a state of mechanical adhesion to the bolus of food, and certainly in a state of minute division in the frothy saliva. The air thus introduced into the stomach undergoes a process of diffusion or interchange with the elastic fluids dissolved in the blood of the gastric capillaries; a diffusion which converts the ordinary gaseous mixture of the atmosphere into one containing less oxygen and more carbonic acid, and in a degree varying according to the duration of its sojourn in the stomach. The gases found in the intestines are chiefly due, however, to the decomposition of the food which they contain. Occasionally, in the course of certain constitutional diseases, gases are evolved in the digestive tube by the decomposition or putrefaction of the fluids which are naturally poured into that tube. This, however, is a rare source of flatulence in gastric diseases proper. According to a number of writers, another source of flatulence is to be found in a process of gaseous secretion which is effected by the vessels of the alimentary tract. Dr. Brinton denies the occurrence of this secretory process. He reminds us that the gases found in the intestines are, both in quantity and quality, precisely those which would be evolved by the decomposition of the various articles of food, and, under circumstances of complete and sudden starvation, are often entirely absent from a great part of the alimentary canal. He reminds us, furthermore, that some of these gases, such as hydrogen, and carburetted and sulphuretted hydrogen, have never been detected in the blood in any such appreciable quantity as would be necessary to explain their evolution from it. Nor can he find any parallel to such a gaseous excretion even in the case of those structures which, like the lungs, are specially organized with reference to the giving out from the blood of certain of its gases and the taking up of others from the surrounding air. For the gases just alluded to, as absent from the blood, are equally deficient in the air of expiration; nay, more, involve, directly or indirectly, a deoxidation of water, such as is not only without parallel in the chemistry of the organism, but is curiously opposed by that oxidation of hydrogen which forms about a pint of water daily in the healthy human subject; while the carbonic acid and nitrogen common to flatus and expiratory air are scarcely less distinguished by their quantitative relations, than are these others by their presence and absence respectively. In the course of his argument, our author refers to the well-known experiment of Magendie, in which the ligation of an empty intestine in a healthy dog is soon followed by its distention with flatus. The inconclusiveness of this experiment is sufficiently indicated, he thinks, by the fact that it does *not* exclude all the alimentary matter, but that, on the contrary, since one grain of starch or sugar would yield, by decomposition, gases capable of occupying about eight cubic inches of space, no such experiment can exclude the presence of sufficient food to account for the gases of the resulting distention: can approach, indeed, the trustworthiness of the contrary observation, as to the empty and contracted state which often results from starvation.

Lecture II. treats of gastritis, and the various appearances exhibited by the stomach after death. Engorgement and hypostasis of the stomach, alterations in the color of its lining membrane, produced by the infiltration or imbibition of biliary pigment and the various coloring matters derivable from food and medicine, such as the red color of wine or logwood, or the black color of the metallic sulphurets reduced from the solutions of their salts; changes in the shape and size of the stomach and the thickness of its coats; mammillation, effusion, post-mortem erosion, and solution of the gastric coats, are severally considered by our author in a concise and lucid manner.

The state called mammillation of the stomach is thought by most writers to be produced by an accumulation of glandular or fluid contents within the gastric tubes. Dr. Brinton has convinced himself that this view of its nature is untenable.

> "For it not only occurs in persons dying suddenly during health, but also in stomachs otherwise perfectly healthy. It is rarely accompanied by any change in the bulk or appearance of the secretory structures. It affects chiefly the more muscular pyloric half or two-thirds of the organ. Its projections often merge, by slight gradations of size, into wrinkles closely akin to those formed in the healthy and contracted organ. It may always be effaced by pressure, generally by prolonged dilatation. And lastly, though, when of limited extent, it is compatible with a relaxation of some other part of the stomach, it is generally associated with local contraction, and is never found both marked and extensive, save in a contracted stomach. As respects the mode in which it is brought about, I believe it to be due, not to a mere contraction of the longitudinal and transverse layers of the general muscular coat—as is evidently the case with the ordinary *rugæ*—but to a much more irregular and uncertain contraction specially shared in by the various bundles given off from this coat to form the muscular constituent of the matrix, in which the tubes of the mucous membrane are packed vertically side by side. In short, it seems to be somewhat analogous to those curious distortions by which the villi share in the *rigor mortis* of the muscular coats of the intestine. I may add, that the permanence of the phenomenon seems to be sometimes furthered by a subsequent process of transudation, which distends the submucous areolar tissue of the various isolated projections or *mammillæ*, with a serous fluid of the same kind as that often found occupying a larger extent of the cellular coat."

The larger portion of this lecture is devoted to a very judicious account of the symptoms, pathology, and treatment of gastritis; and catarrh, hemorrhagic erosion, and follicular ulceration of the stomach.

Lecture III., which occupies about one-fourth of the whole volume, is derived chiefly from an excellent monograph on Ulcer of the Stomach, published by our author in 1857. As this monograph was reviewed in Vol. II. No. 6, of this Journal, we refer our readers to that number for an account of the views of our author relative to this interesting disease.

Lectures IV. and V. are occupied with the consideration of cancer of the stomach; cirrhotic inflammation or plastic linitis, suppurative linitis, tumors, hypertrophy and atrophy of this organ; dilatation of the stomach, resulting from obstruction, destruction, injury, and paralysis; and secondary inflammation. Our limited space will not permit us, however much we might desire, to place before our readers a résumé even of the valuable facts and arguments which Dr. Brinton has been at much pains to bring together, with a view to elucidate the nature and pathology of the disorders above mentioned, and to found thereupon a strictly philosophical and successful treatment. Suffice it to say, that these lectures will repay a careful perusal; and we confidently refer the reader to them for much valuable information, both practical and eminently suggestive in character.

Dyspepsia constitutes the subject-matter of Lecture VI. and last. Dr. Brinton has evidently studied the protean phenomena of this distressing functional disease with the greatest care. He examines first what he calls the gastric and intestinal relations of the disease. Disturbance of the gastric functions is by no means the exclusive cause of those symptoms which, in the aggregate, constitute what is called dyspepsia. There are many cases of this disease in which the stomach is by no means the organ first and most in fault. Indeed, it would appear, from the observations of Dr. Brinton, that in many cases of dyspepsia, the stomach is perfectly capable of executing any reasonable amount of work.

"But such a conclusion by no means disproves the close relation of dyspepsia to derangement of the stomach, or excludes it from consideration among the diseases of this organ. It may be quite true that, in some cases, the stomach is only distressed by the excessive amount of food introduced into it; and is only injured by being overtasked, much as a muscle or a tendon might be. It may be equally true that, in others, it is weakened by want of exercise, or deranged by a surplus of the materials amenable to other parts of the digestive process; that it languishes for want of the protein compounds it ought to elaborate; or is surcharged by starchy or fatty matters foreign to its office—perhaps often in excess of what can be assimilated by the organs whose function it is to do so. Still since, in a vast majority of cases, the symptoms of dyspepsia are referable mainly to the stomach—since the organ is either primarily or secondarily deranged, and the symptoms of that derangement are the chief phenomena observed by the physician and felt by the patient—we may safely accept the ordinary view, that dyspepsia generally represents a functional malady of the stomach. Doubtless there are many derangements of other parts of the alimentary canal equally entitled to the name of indigestion. But with the exception of intestinal dyspepsias attended by diarrhœa—and often accompanied by such a catarrhal state of the large intestine as amounts to a structural lesion—the symptoms strictly intestinal are generally scanty and obscure, in comparison with those traceable to the stomach. And hence these latter may justifiably be the chief objects of our study. Even were they mere incidents of the malady, so long as we remembered that they were not its essential or sole features, but only those most accessible to our scrutiny, we should be entitled in according them a notice proportionate to their importance. But when we find (as we do) that the stomach not only always shares, and sometimes almost monopolizes, the derangements called dyspepsia, but that it is the chief source of their most striking symptoms, and that it is also more amenable to treatment than any other part of the digestive canal,—we are justified in describing dyspepsia as being, for practical purposes, a gastric disease.

"Why the symptoms of dyspepsia refer chiefly to the stomach it is not difficult to understand. The physiology of digestion affords us plausible grounds for presuming that the details which distinguish this organ from the remainder of the alimentary canal—especially its shape, its size, its situation, its office, and the peculiarities of innervation associated with them—give it a kind of paramount importance, and render it, in the main, far more sensible to various disturbing agencies, and far more disposed to betray disturbance by abnormal phenomena—such as pain, vomiting, or flatulence—than any other segment of the digestive tube. So that even were purely intestinal dyspepsia much more frequent and important than it seems to be, the study of gastric dyspepsia would still be the best means of approaching its consideration. Apart from the frequent secondary involvement of the stomach in the intestinal variety, the symptomatology of dyspepsia of both kinds would be best studied from its most distinct and accessible side. In this respect, indeed, the functional derangements of the stomach and intestine do but parallel their structural diseases: in which we often find that lesions, otherwise precisely identical, are betrayed by much more distinct symptoms when located in the stomach than in the bowels; and that, in the latter situation, they are sometimes mistakenly referred to the stomach, owing to those secondary derangements of this organ which they are liable to excite.

"Such a view of dyspepsia suggests two considerations as to its diagnosis. Since it represents not so much a single and substantive disease as a variety of ailments, and is characterized not so much by the presence of certain symptoms as by the absence of structural lesions, the diagnosis of the malady in general, and of any case of it in particular, are opposed by analogous difficulties. As the progress of scientific medicine has gradually revealed the morbid anatomy of the digestive canal, and thus detected structural disease with increasing accuracy and frequency, the vague (but useful) term 'dyspepsia' has acquired a continually more restricted meaning. Nor can we doubt that it is destined to still further limitation; and that, as advancing knowledge brings us better means of investigation, and so enables us to discover and distinguish structural changes of which we now can only observe the functional results, the aggregate of maladies called dyspepsia must undergo successive subtractions, tending more or less completely to its total subdivision into special maladies, and to the removal of this term from our nosology. And while I hope that many of you will hereafter repeat (as you advance in the knowledge of your art) this increasingly restricted application of the term 'dyspepsia,' I venture also to predict that, even in the investigation of a single case, you will often find yourselves deducing its dyspeptic nature rather by a gradual exclusion of what it is not, than by any such a sudden recognition of what it is, as, in the substantive diseases of many other organs, often anticipates the result of a systematic inquiry. And (as a kind of corollary to this) let me suggest that not only does 'dyspepsia' still probably include many really structural (if not chronic or permanent) maladies of the organs it affects, but that so closely do its absolute symptoms resemble those of graver diseases, that its importance is enhanced by the possibility of mistaking, for it, such lesions as cancer or ulcer of the stomach. Sometimes, indeed, such errors are almost unavoidable. But, more frequently, they arise from a forgetfulness of the slight characteristics of these structural diseases in their earliest stages; leading to a hasty conclusion, which a brief suspension of judgment would have prevented, or even reversed. Nor is the stomach the only organ whose lesions may be mistaken or regarded as mere dyspepsia. Just as there is none whose diseases do not react upon the organism generally, and thus influence the nature and amount of food the stomach requires, and the instinctive sensations of hunger or anorexia associated with the fluctuations of these wants—so it is hardly too much to assert that every grave constitutional malady has its own dyspepsia, brought about by conditions strictly analogous to those which produce it as an independent ailment, and capable (in those cases in which it is unusually early or prominent) of masking any slight indications of organic mischief in the particular organ to whose lesion it is indirectly due. Much as the progress of physical diagnosis has done for modern medicine, the warnings of our predecessors as to the danger of mistaking phthisis and other diseases for the dyspepsia secondary to them, are even now worthy of your recollection--not only because they afford the strongest motive for a thorough inquiry into the condition of all suspected organs in every case of dyspepsia, but also because the physical signs of these diseases are, in rare instances, so indistinct, as to leave us almost exclusively to that keen scrutiny of symptoms, and that mental process of induction, by which the sagacity of the older physicians sometimes arrived at a diagnosis scarcely less accurate than what is now more easily obtained from physical investigations."

After describing the rise, progress, and symptoms of an ordinary dyspepsia, Dr. Brinton passes in review some of the varieties of this hydra-headed disorder—such as the "flatulent dyspepsia," characterized by severe or continuous pain in the epigastric region; "intestinal dyspepsia," whose specific feature is constipation, alternating with attacks of diarrhœa; "ingestive dyspepsia," in which indigestion closely follows the introduction of food into the stomach; "post-digestive dyspepsia," occurring simultaneously with the propulsion of the contents of the stomach into the duodenum; and "fasting dyspepsia," existing during the intervals of gastric activity, and ceasing upon the ingestion of a new meal. With regard to the classification of the various forms of dyspepsia, our author proposes several valuable suggestions, based upon physiological grounds. Keeping in view the well-known classification of aliments laid down by Prout, he recommends "a division of dyspepsias according to that alimentary constituent, the failure of which to be digested provokes their symptoms." He speaks of the "proteinous" dyspepsia common among the affluent and sedentary, and characterized by headache and epigastric pain, rarely severe, but often referred to the region behind the sternum, corresponding to the cardiac aperture of the stomach; the "starchy" dyspepsia of the poorer classes, chiefly distinguished by the extreme flatulence which generally accompanies it; the "oily" dyspepsia, attended, in addition to much headache and epigastric pain, with severe and continuous nausea or even vomiting. Dr. Brinton thinks that even "saline" and "aqueous" dyspepsias might be added to this list. He has known instances in which persons appeared to be rendered singularly dyspeptic by the saline contents of a hard or calcareous drinking-water; as well as others in which nothing but a strict limitation in the quantity of this diluent, however pure, habitually consumed with their food, sufficed to ward off the malady. Of course similar effects may often be traced to the condiments, the peppers and spices, for example, taken with food. But many of these stimulant and acrid substances really possess noxious characters; and few of them can be fairly regarded as ranking among the physiological constituents of food; besides, their ill effects are but secondary and collateral, being referable to the undue quantity of food which they tempt those who use them to consume.

Another classification or grouping of gastric dyspepsia is suggested by our author, based partly upon the chemical reactions of the fluids expelled from this organ by regurgitation or vomiting, and partly upon the physical properties and microscopic appearances of such fluids.

The causes and treatment of dyspepsia are discussed at some length. Counter-irritants are regarded by Dr. Brinton as useful chiefly in the severer forms of the disease, attended with great pain. Pepsine has disappointed him in most of the cases in which he has tried it. Occasionally, indeed, he has seen it produce considerable disturbance of the stomach, even in cases which were carefully selected, and in which there appeared to be no great irritability of the organ. To obviate some of its disadvantages he proposes to use it in the shape of peptone, a form in which he believes it would be of great benefit as a highly nutritive drink or enema in certain œsophageal and gastric lesions. Tonics are regarded by our author as an almost indispensable part of the treatment, unless contra-indicated by gastric irritability. Of all the bitter tonics, quinine is perhaps more frequently useful than any other. As a rule, Dr. Brinton thinks that these tonics should be administered, either on an empty stomach, or, if the appetizing effect is desired, shortly before a meal; but when combined with alkalies, they may often be taken with advantage toward the close of the digestive act. In cases where dyspepsia is complicated with diarrhœa or pyrosis, the more astringent vegetable tonics, such as hæmatoxylon, kino, catechu, krameria, etc., may be used with advantage. Of the various metallic substances employed with benefit in dyspepsia, iron and zinc are perhaps the most useful. Of all the preparations of iron, the citrate is borne by the stomach better, perhaps, than any, especially if administered in an effervescing form. The carbonate, phosphate, sulphate, and sesquichloride are preparations which agree with most stomachs. The efficacy of iron appears often to be heightened by combination with zinc. The oxide and sulphate of the latter substance sometimes prove very useful in the treatment of the disease under consideration. "Bismuth, some of the effects of which may perhaps be regarded as tonic, is still more useful as a remedy against that form of dyspepsia which constitutes the 'morbid sensibility of the stomach' specified by the older writers. Here its effects in allaying flatulence and nausea, and in preventing vomiting, and (still more) in checking the pain produced by food, are so marked, that we may fairly accept the term of sedative often applied to it." The alkalies and their carbonates, and the alkaline earths, are of use chiefly in those cases where flatulence, regurgitation, and heartburn occur at the close of the digestive act. They serve to neutralize the lactic and acetic acids generated by the decomposition of undigested food. They also appear to remove the uric acid diathesis which sometimes complicates the more obstinate varieties of dyspepsia, and influence, perhaps, the hepatic, pancreatic, and intestinal secretions. Acids, besides acting as tonics, seem to increase not only the quantity, but also the solvent properties of the gastric juice. They should be given during or immediately after a meal. The hyposulphite of soda is favorably noticed by our author as a remedy in cases of flatulent dyspepsia. It acts locally upon the stomach, and seems to check decomposition in the food. In some respects it resembles the alkaline carbonates, and may be administered in the same doses and combinations, and with the same limitations. Dr. Brinton recommends the iodide of potassium, in doses of two grains, combined with from seven to ten of the bicarbonate of potassa, in those cases of flatulent dyspepsia in which—whether from a too starchy diet, deficient or hasty mastication, decayed teeth, the abuse of tobacco, or other causes—the salivary secretion seems either deficient in quantity or faulty in quality.

But our limits, already exhausted, will not permit us to follow our author in his remarks upon the use of sedatives, purgatives, mercury, strychnia, silver, arsenic, prussic acid, alcohol, and other articles, in dyspepsia; nor can we reproduce his suggestions respecting the dietetic and hygienic management of this disease. For these remarks and suggestions we must refer our readers to the work itself, a work in which they will find much that is valuable and interesting, and of which we have endeavored to present an analysis as clear and instructive as is consistent with the brevity enjoined upon us.

ART. III.—*A Treatise on Gonorrhœa and Syphilis.* By SILAS DURKEE, M.D., etc., etc. With Eight Colored Plates. 8vo., pp. 442. Boston: John P. Jewett & Co., 1859.

A Treatise on the Venereal Disease. By JOHN HUNTER, F.R.S. With copious Additions by DR. PHILIP RICORD, Surgeon of the Hôpital du Midi, Paris, etc. Translated and edited, with Notes, by FREEMAN J.

BUMSTEAD, M.D., etc. Second edition, revised, containing a Résumé of Ricord's recent Lectures on Chancre. 8vo., pp. 552. Philadelphia: Blanchard & Lea, 1859.

THE former of these volumes is the first attempt at an altogether original work on venereal diseases which has ever been made in this country. Few American practitioners have opportunities for observation, in this department, so ample as to warrant them in claiming a seat among authoritative syphilographers. Dr. Durkee, however, lays before the profession the results of his experience, making it his paramount object to furnish a practically useful book. How far he has succeeded in performing this task satisfactorily we have now to examine.

Common usage has given a significance to the word *gonorrhœa*, which is acknowledged by our author in his adoption of it upon the title-page of his book; but his first chapter is upon *blennorrhagia*, and this latter word seems to be used by him very much more frequently than the former. Neither term is strictly correct, but we decidedly prefer the less pedantic, and, to most minds, more suggestive one first mentioned.

With regard to the cause of gonorrhœa, we must express our skepticism concerning those unfortunate cases where suppurative urethritis is said to occur without any specific influence. So many persons of our acquaintance have eaten salt meat, been intemperate, danced to excess, had rheumatism, and ridden hard-trotting horses, without this result, that it really seems as if another element must have been unacknowledged in the few cases where it has been ascribed to these causes alone. Nor can we believe that a healthy male urethra is thus affected by contact with a simple leucorrhœal discharge, acid or alkaline. Dr. Durkee has weakened the position he takes upon this latter point at page 6, by his admissions at page 158. But, in fact, the perfidy of Venus has such a universally acknowledged effect upon her victims, that actual observation is indispensable to the establishment of any opinion concerning these matters. Perhaps no surgeon ought to be convinced of the possibility of the cases alluded to, unless by experience in his own person.

The treatment of gonorrhœa is the chief topic of Dr. Durkee's second chapter. We agree with him especially in condemning the use of strong injections into the urethra, and in awarding to copaiba and cubebs a value which it is at present the custom of some surgeons to deny them. Here, however, we must object to the use of such terms as "anti-gonorrhœal powers," "a sedative and anti-blennorrhagic influence;" they are not in accordance with sound therapeutics, and might readily mislead the inexperienced.

At the end of this chapter, in connection with the subject of urethral hemorrhage, an anecdote is related, which we think unnecessary and indecent. On page 113, also, is a very diffuse statement of a case, open to the same remark; and throughout the book there are passages which, although generally much less offensive than those just mentioned, are suggestive of another style of literature. Prudery is impure; but there is a certain propriety which can and must be maintained in dealing with these subjects, and which is especially desirable as the distinctive mark of those who study them seriously. Let us not be thought to accuse our author of any impurity in thought; but as we would handle a chancre or a bubo with circumspection, so must we think and speak of this vilest self-inflicted infirmity of our race. Medical men see too much of the fearful issue of these diseases, to make them the subject of trifling remark.

In the chapter on balanitis, our author discountenances slitting up the prepuce when chancres exist within it, and it is in a state of phymosis, lest the wound so made should assume a syphilitic character. We are, however, convinced that, unless there is a free entrance for our local applications, and a free exit for the discharge, such a course is the proper one. Absorption is not more to be dreaded from a large than from a small extent of surface, while a great advantage is gained in laying open the seat of disease to inspection and treatment. The deformity left is but trifling, and the lips of the incision are under control from the outset.

Dr. Durkee assigns less value to the practice of compression in swelled testicle than it seems to us to merit. We have often found that it actually diminished the tenderness of the part, and are inclined to believe that less induration is apt to remain in those cases where it has been employed. Another plan which sometimes answers, and which is particularly useful as a preparative to compression when the tenderness is extreme, is the application of astringent and anodyne dressings, such as lint soaked in lead-water and laudanum.

The chapters introduced in this portion of the work on herpes, eczema, and excoriations of the prepuce, would have been more appropriately placed in connection with the subject of syphilis; it may also be a matter of doubt whether those affections required the allotment of so much space. Nor does it seem to us that spermatorrhœa could be included in a strict construction of the title adopted by our author, especially as he has altogether omitted to speak of strictures of the urethra, which are, in so large a majority of cases, directly traceable to gonorrhœa.

We now come to the portion of Dr. Durkee's work which has reference to syphilis. And here there is a strange jumbling-up of subjects, which seriously impairs any value that may be claimed for the text. What a chancre really is, and how it is to be recognized, is nowhere clearly stated; we read of cartilaginous, Hunterian, inflammatory, and phagedenic chancres, of the views of authors concerning various points, but on seeking for a satisfactory explanation of these terms, we are disappointed. Nor do we think that it is well to use such terms, as denoting different varieties of chancre.

A syphilitic ulcer, a primary sore, has the peculiarity of inducing a sore like itself wherever its matter is applied to a raw surface. It may also give rise, after a time, to certain general secondary and tertiary symptoms; although this property is by many ascribed only to the indurated form.

Now, either a soft or an indurated chancre may take on a phagedenic form, or become surrounded by inflammation; its chancrous character is retained, the new phenomena being simply superadded to the old. These conditions do not, therefore, constitute varieties, strictly speaking, and confusion arises from regarding them in that light. Such at least is the view which we hold, although, for the mere sake of convenience, the descriptions of these forms may be very properly separated. It is because a distinction is drawn between the accidentals as if they were essentials that the student is led to imagine several mysteries, instead of only one.

We do not believe, with Dr. Durkee, that there is a "duality of chancrous virus." We believe that any of the above-mentioned forms may, by inoculation, produce any other, according to certain conditions residing in the part or the individual inoculated; and that all are followed by the same secondary and tertiary phenomena. Nor is there, in our opinion, any difference between a chancre and a common sore, except in the inexplicable communicability of the former, and in the sequelæ of which other parts become the theatre.

As to the *masked* chancre of our author—*concealed* is a much better word, *urethral* is better still—it is of no importance, except as regards its diagnosis and some difficulties in its treatment. But upon this latter point we are somewhat surprised to find that the local applications recommended are so much less powerful than those for the external sore. It seems as if the nitrate of silver, applied by means of a porte-caustique, would afford a much greater degree of security than any other remedy available under the circumstances. To use nitric acid or potassa fusa for an external chancre, and to content ourselves with chloride of soda in solution for a urethral one, would imply that the latter was a source of less serious apprehension.

Dr. Durkee speaks very strongly in favor of the potassio-tartrate of iron, both as a general and as a local remedy, in cases of phagedenic chancre; he recommends also the use of carbonate of ammonia internally. Having never employed the former preparation, we cannot speak from experience in regard to it; but we have been very well satisfied with the effects of very dilute nitric acid as a wash, and chloride of zinc or soda as a steady dressing, in these cases; while the permanent stimulants seem to us, as a general thing, to accomplish more than the diffusible.

Our author advocates the use of small blisters, with a subsequent dressing of mercurial ointment and muriate of ammonia, in the treatment of buboes; but he very properly states that no plan can be implicitly relied on either for their prevention or for their cure. His favorite application, in cases where an indolent ulcer is left after the opening of a bubo, is the potassio-tartrate of iron; we have sometimes found a paste made with chloride of zinc, ʒss to ℥j of starch, to have an excellent cleansing and stimulating effect in this condition of things.

It would extend this review to an unwarrantable length, should we go into an analysis of the remaining chapters of Dr. Durkee's work, embracing secondary and tertiary syphilis; a few points only can be touched upon.

The interesting question, whether secondary syphilis can be communicated to an individual without his or her ever having a primary sore of the usual kind, is discussed in a separate chapter. Dr. Durkee is inclined to believe that such a thing may happen; he cites five cases of his own, and quotes others from different writers, in proof of this view.

There are, however, some considerations which should be taken into the account in weighing this question. In the first place, the cases are but few which support the idea at all. The patients are nearly all women, in whom it is, of course, more difficult to ascertain either the existence or the non-existence, past or present, of a chancre. And of those of the other sex, perhaps not one would imagine that he could have a venereal sore anywhere but on the penis; as to the children in whom the disease is hereditary, they cannot be said to receive it—it is a part of them. Hence we would place this matter in the same category with one or two before mentioned; we confess that our skepticism could only be removed by experience in our own person.

The secondary and tertiary symptoms of syphilis receive an extended notice from our author. We are not altogether satisfied with the classification given by him of the syphilodermata; at least it would have been more valuable to the inexperienced if some explanatory comments had been added. Nor are the pictures, in our opinion, at all illustrative; they can be of no use either to the inexperienced or to those who are able to note their defects.

We must remark that Dr. Durkee's style is often unpleasantly stilted. "The testicular organs and their corporeal forces," "the buccal cavity," "the vascular and dermoid tissues," "cuticular discharges," are not only awkward, but incorrect expressions; they are specimens of a certain florid redundancy to which the author seems quite attached, but which weakens very seriously the force of his reasoning.

It would have been well had references been given more generally where opinions and passages are quoted, as there are many readers who may desire to look them up in their originals. No matter of convenience is more commonly neglected than this, which is often really of importance to the reader and to the author quoted; to the latter it is perhaps a right which should always be conceded. And here let us claim for the quoted another of their dues, which is, that their names should be spelt correctly. On page 193 of the present volume we find "Boek" and "Danielson" for "Boeck" and "Danielssen." Foreign authors do indeed mutilate English and American names, but with an honest awkwardness which shows that it is their misfortune and not their fault.

In making the foregoing comments upon Dr. Durkee's work, we have not been prompted by a fault-finding spirit. We consider that authors sustain a certain obligation to uphold the credit of their country and of their profession; if their productions fall short of this, the reviewer has his duty also to perform, without fear or favor. Should his judgment be erroneous, it must and will be set aside by that of the profession at large.

The work of Hunter, with the additions of Sir E. Home, and the notes of Babington and Ricord, maintains a most enviable position among monographs. It passes now for the second time through the hands of Dr. Bumstead, who has added extracts from M. Ricord's recent lectures, as reported by M. Alfred Fournier.* As for the older portions of this valuable treatise, they have so long stood the test of professional criticism that it would be superfluous for us to discuss them anew; we have only to speak of that which is now for the first time presented in an English dress. M. Fournier's reports have already been criticised in this Review, (July, 1858,) so that in fact it is the dress itself with which we are now concerned.

Dr. Bumstead has, in our opinion, succeeded very well in embodying the views held at the Hôpital du Midi in his notes to the present edition. These views, in regard to the difference between simple and infecting chancres, are contained in a note nearly ten pages in length, substituted for the latter portion of Ricord's original note to Hunter's chapter on chancre. Appended to the chapter on the constitutional treatment of chancre, is a note setting forth the therapeutical indications deduced from those views; and some new ideas concerning buboes are to be found in a note substituted for that formerly placed in connection with the chapter on buboes in women.

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* Leçons sur le Chancre. Professées par le docteur Ricord; redigées et publiées par Alfred Fournier, Interne de l'Hôpital du Midi. Paris, 1858.

On page 497 we find a note inserted, in which mercury is virtually called a specific for the earlier constitutional manifestations of syphilis, and iodide of potassium for the tertiary. Perhaps there are very many surgeons who would disclaim this idea theoretically, who, nevertheless, act upon it daily in their practice.

The employment of the chlorate of potassa as a preventive of the disagreeable effects of mercury, is alluded to with favor by Dr. Bumstead, in a note on page 502.

M. Ricord is what is termed, in American popular parlance, a "smart" man. His writings are not so much clear and convincing by their earnestness and perspicuity, as they are brilliant and startling; so that one is dazzled and carried away by his meretricious casuistry, rather than compelled to yield to the force of his arguments. Not that we would deny his correctness, perhaps, in any of his positions; but we feel that we are in the hands of a dexterous reasoner, who could prove one side of a question as well as the other, if he chose to do so. Hence we have always, we must confess, when reading his arguments, somewhat the feeling with which one watches a juggler; his results are arrived at often with a startling suddenness, and stated with an easy flippancy which would be apt to overmatch the opposition of an ordinary plodder in medical reasoning.

His doctrine as to the simple and the infecting chancre, developed as it now is, seems to us to involve the advocates of syphilization in a dilemma. For if a man who has had one indurated chancre will not have another, then the giving of it to him simply converts a mere risk into a certainty. If soft chancres only are caused by artificial inoculation, how many soft chancres are equivalent to one of the indurated variety, against which alone it is so desirable to obtain immunity?

In the twenty-third of his "Letters on Syphilis," M. Ricord somewhat pathetically exclaims: "Oh, Syphilis, when will you be understood?" And when we remember that it is not many years since a work was issued on the non-existence of a syphilitic virus—that it is at present undecided whether there be one virus or two*—when we look at the theory, certainly not one to be carelessly rejected, of syphilization, we can but ask, does the mystery that envelops so many parts of this subject reside in the facts themselves, or in the minds of those who study them? Are we any nearer to the true pathology of venereal diseases than the surgeons of the last century were, or have we only gained so much caution that we do less mischief in the way of medication than they did?

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* Ricord, Leçons sur le Chancre, p. 227.

ART. IV.—*Anatomy, Descriptive and Surgical.* By HENRY GRAY, F.R.S., Lecturer on Anatomy at St. George's Hospital. The Drawings by H. V. CARTER, M.D., late Demonstrator of Anatomy at St. George's Hospital. The Dissections jointly by the AUTHOR and DR. CARTER. With 363 Engravings on Wood. 8vo., pp. 754. Philadelphia: Blanchard & Lea, 1859.

WE can imagine with what diffidence the student of two or three centuries ago must have approached the ponderous folio which was to open out to him the mysterious secrets of his own organization, and to introduce him into a hitherto unexplored field of investigation. With what awe must its teachings have impressed him, as he perused the lengthy terms in Greek and Latin, or of classical derivation, which, when translated into familiar language, signified so little, while their sound implied such copiousness! The *embarras des richesses* must have been more keenly felt then than now, when so much more system is adopted in the classification of known anatomical facts. Many of the terms employed in the older works on anatomy have passed into disuse; although a large number still remain, occasionally perhaps shorn of their original dimensions. Anatomical works of the present day aim more at facilitating the student in the acquisition of a knowledge of his own structure, by offering him, when practicable, a terminology founded upon points of anatomical importance. The names of many of the muscles, for instance, are suggested by considerations of this nature, although other modes of nomenclature are likewise adopted. Whenever it is possible to excise from the older words superfluous syllables, the task is successfully accomplished; and although it may be true that such words as Basio-cerato-chondroglossus are stumbling-blocks in the path of the student, still the genius of the language tends to reform, and shorter words, which signify as much, are gradually replacing polysyllabic predecessors, which have become venerable only from their antiquity. We might wish, sometimes, that it were possible to modify entirely the old system of nomenclature, in order to found one based upon more rational views; but even in this mode it would be difficult to adopt any that would be universally recognized as the standard for all nations. Systematic works are tenacious, to a remarkable degree, of the legacies of words bequeathed to them by antecedent treatises; and naturally so, when we bear in mind that the completeness of a work is supposed often to depend, to a great extent, upon the amount of material embraced in its pages. These remarks, which apply occasionally to works on anatomy, where, however, copiousness of detail is unavoidable, apply more forcibly to other subjects of less importance.

Mr. Gray's work, like almost all other anatomical treatises, preserves many of these relics of antiquity, preferring, doubtless, to aim at a reputation for accuracy, rather than for originality—a quality, indeed, that a mere descriptive treatise cannot readily attain. The beaten track of description must be followed by every anatomical writer. Man, as he was in the infancy of the race, exists in bone, muscle, artery, the same now; and he who would describe his anatomy differently from his predecessors, can do so only by addressing the eye of the reader in a different way, or by varying from them in his command of language or his facilities in clothing simple facts in a more attractive garb.

A work on anatomy, to meet the wants of student, physician, and surgeon, must aim at the accomplishment of several important ends: to give a clear, concise statement of facts, which will aid the student at a time in his professional career when he feels most the need of its careful guidance; to furnish the physician with information on points which may be of vital consequence to him in his daily practice; and to indicate to the surgeon the varied and varying channels by which he may restore physical deviations, or the guiding marks by which he may know how to avoid important vessels or nerves, injury to which might destroy the life of his patient. We think the work of Mr. Gray meets these requirements, arranged as it is, throughout its pages, into divisions of topographical and descriptive anatomy, equally useful at any period of professional life. The great feature of the work is the mode of illustration. The cuts require no side-references or foot-notes, as in other anatomical treatises, the lettering of points to be studied in connection with each bone, muscle, nerve, etc. being a part of the engraving, and clearly marked. The cuts are of large size throughout; so much so, indeed, that the publishers in their catalogue notice state that "the large size of many of the illustrations prevents the selection of a favorable average specimen." We feel assured that the work must become popular with students and physicians for this reason, even if it had not other merits to recommend it.

We can plainly see that a work of this kind, printed page for page with the English edition, could have admitted of but little chance of rearrangement. As an example of slight but valuable reconstruction, however, we find, on comparing the English and American texts, the fifth nerve and its branches much more clearly divided in the republication than in the original work. We think the American editor has done wisely to separate "the ganglia connected with the fifth nerve" from the individual branches with which in reality they do not have an intimate relation, belonging rather to the "cephalic portion of the sympathetic system" than to the cerebro-spinal system of nerves under which they are described.

The author follows, in the divisions of his subject, the generally adopted routine course of the text-books on anatomy, which have been found the best adapted for the student; but furnishes, in addition, full and valuable remarks on surgical anatomy—an important branch, especially when presented, as in the work before us, in close connection with descriptive anatomy. Particular attention is paid in the first general division of osteology to the development of various parts of the bony structure, as well as the general outlines and prominent points of individual bones, dotted lines being added in the illustrations to show the origins and insertions of muscles, after the manner of Mr. Holden. The chapter on articulations occupies much more space than is usually given to this subject; and upwards of a hundred pages are devoted to the muscles and fasciæ. In the chapter on arteries, besides a careful description of vessels, particular attention is devoted to the surgical relations of every important artery, its peculiarities and varied modes of distribution, and the plan of operating, should ligation be required. The circle of Willis is beautifully shown in a full-page engraving, which would furnish a hint for a capital model of the base of the brain, and the distribution of vessels to that organ. The arteries of the pelvis are represented in a large cut; and the portal vein, with its branches, is exhibited in all its relations to intestine, liver, pancreas, stomach, etc.; an illustration which facilitates the physiologist in his efforts to explain the course of fluids—alcoholic liquors, for example—which pass into the abdominal venous system, and the pathological changes produced in this way in the structure and functions of the liver. The nervous system and organs of sense receive a large share of attention; and the system of illustration of that intricate part of the nervous apparatus—the brain—is novel, and exceedingly useful to the student.

After devoting several chapters to the full consideration of the organs of digestion, the thorax and thoracic viscera, the peculiarities of the fœtal circulation, the organs of voice and respiration, and the generative and urinary organs, Mr. Gray concludes his useful work with several chapters on the surgical anatomy of hernia, inguinal and femoral, and of the perinæum and ischio-rectal region.

The American edition of Mr. Gray's work has been carefully corrected, and contains but few typographical errors. In some of the statements we may differ with the author, but it is often in such minute anatomical distinctions of layers, etc., that we may fairly conclude that he has really and honestly described what he has seen, instead of always following implicitly the descriptions of others. In a second edition, the author would doubtless observe occasional faulty constructions of sentences, which were probably the results of hasty writing, but which add a little obscurity to the text. A hypercritical searcher after such faults of construction and typography, for the purpose of exposing every weak point, might, in any work, find abundant material for censure. If Mr. Gray deserves, more than other authors, condemnation for his errors, he may take refuge in the fact that the capital illustrations generally elucidate all such obscurities. We notice, occasionally, a variation between the text and the illustrations—in such words as "perineum" in the latter, and "perinæum" in the former, "gluteus" and "glutæus," etc.; but these are inconsistencies that it would have been difficult to avoid. In some of the illustrations, words containing *a* and *u* might sometimes be read incorrectly, as "mular," instead of "malar," from the occasional want of sharpness of the individual impression.

It is needless for us to suggest that the work before us might have contained subjects which it has omitted, or might have said less upon subjects which it very fully describes. There are a thousand matters directly or indirectly connected with anatomy, that might be introduced, and yet we think their introduction would scarcely be wise, although it might satisfy the craving of admirers of such topics. Pathology would lend hundreds of materials to construct the work, and to amplify it into a bulky volume, useless to the general student from its very size and fullness. The work has received no additions from American hands, although we are disposed to think that occasionally it might have been benefited by such an interposition. In such portions, for instance, as are rendered obscure from a faulty manner in which Mr. Gray expresses himself, an American editor, who had full power to add carefully, wherever deficiencies rendered it requisite, might have thrown considerable light.

There are many in the profession to whom the English edition of a book, with all its errors, is preferred to an American reprint, with all its improvements and modifications, apparently because English type and English paper are employed in the manufacture of the former and not of the latter. We do not bow to the omnipotence of this prejudice in the republication of Mr. Gray's book. The cuts are the same as in the London edition; the errors of the text, we are assured, have been corrected in many hundred instances, in spite of the author's acknowledgment, in his preface, of "the able assistance afforded him in correcting the proof-sheets in their passage through the press;" the table of contents and illustrations have been materially improved; and last, but not the least important feature of the work, the index has been more clearly arranged by spreading the headings over a larger surface, and its numerous errors of paging attended to. Wilson's Anatomy, so long a standard work in the medical schools, falls far behind Gray's work in copiousness of index; while Sharpey and Quain's Anatomy, although more full than the former, contains a very large number of subjects less than the latter.

We should recommend the work before us, in its improved American edition, as a useful book of reference to the unprofessional reader, who can see at a glance the illustrated representations of prominent points on which he desires information. To the general reader, as well as to the professional student and practitioner, we can speak confidently of the value of any standard book, whose illustrations seem to have been designed expressly to follow the text, and whose text follows very closely the illustrations. The getting up of the book in such beautiful style reflects credit upon the enterprising house which has given it an American circulation; and we trust that this edition, superior as it is in so many respects to the original work—superior, indeed, in some points to other anatomical works—may be widely disseminated through our country, as a means of diffusing more general anatomical information.

ART. V.—*Leçons thèoriques et cliniques sur les Affections Cutanées Parasitaires, professées* par le DOCTEUR BAZIN, Médecin de l'Hôpital Saint-Louis, Chevalier de la Légion d'Honneur, etc. Rédigées et publiées par M. ALFRED POUQUET, Interne des Hôpitaux. 8vo., pp. 236. Paris: Adrien Delahaye, 1858.

Theoretical and Clinical Lectures on Parasitic Cutaneous Affections. By DR. BAZIN, Physician of the Hôpital Saint-Louis, etc. Edited and published by M. ALFRED POUQUET, Interne of the Hospitals.

THE Hôpital Saint-Louis in Paris is devoted mainly to the management of scrofulous and cutaneous cases, and the work before us embraces the theories and results of treatment arrived at by M. Bazin, one of the physicians attached to that institution, in a class of affections of the skin which he considers to be developed by parasitic growths. The author treats of cutaneous affections, (*affections cutanées,*) in contradistinction to cutaneous diseases, (*maladies cutanées,*) and gives his reasons for including, under the common head of parasitic affections, inflammatory conditions of the skin, varied in their appearance and elementary characteristics. A parasitic cutaneous affection (*affection cutanée parasitaire*) he defines as an affection of the skin produced directly by the parasite itself, or symptomatic of a parasitic disease, while by parasitic disease (*maladie parasitaire*) he signifies a peculiar and accidental state of the organism, which exhibits itself as a consequence of the presence of a parasite, whether animal or vegetable, on some part of the body, and which is manifested by a combination of symptoms, lesions, and affections. For example, tinea tondens (*teigne tonsurant*) is a condition which embraces all the expressions of that disease dependent upon the existence of a vegetable parasite, such as erythematous discs, herpes circinatus, eczema circumscriptum, etc.; it is, therefore, a parasitic disease, while each one of its manifestations, herpes circinatus, for example, is a parasitic affection; and the tricophyton is the parasite. In other words, the author wishes to convey the idea that a cutaneous *disease* is a generic term embracing many subdivisions of *affections*, etc. The distinction is one not always made with facility, and, according to this view of M. Bazin, it would be difficult to form a nosological classification that would comprehend all the morbid conditions of the skin.

The subjects embraced in the work are exclusively those to which M. Bazin has devoted special attention at the Hôpital Saint-Louis. He explains the actions of parasites as causes, symptoms, and lesions, or sequences of cutaneous affections, gives a historical sketch of discoveries in regard to vegetable and animal parasites, and the general and special nosography, etiology, therapeutics, etc. of this class of affections. Vegetable parasites are subdivided, according to the portion of skin which they affect, into those which have a preference for the hair and nails, (*vêgêtaux trichophytiques et onychophytiques;*) those which live on the epidermis, (*vêgêtaux ēpidermophytiques;*) and those on the epithelial surface, (*vêgêtaux ēpithēliophytiques.*) Animal parasites are divided into two classes, according as they occupy the exterior surface of the body over which they roam at will, or as they are seated in the substance of the epidermis. Discoveries in regard to vegetable parasites are of modern date, only twenty-five or thirty years having elapsed since Schœnlein first described, under the name of Oidium, the vegetable parasite of tinea favosa, which is now known as the Achorion Schœnleinii. Since that time, other interesting discoveries have been made by distinguished microscopists, among whom may especially be mentioned MM. Remak, Bennett, Fuchs, Lebert, Gruby, and Ch. Robin. The knowledge of the existence of animal parasites is of ancient date, but the history of the Acarus, first mentioned by Avenzoar, is of more modern times.

The author sums up briefly the general therapeutics of parasitic cutaneous affections, which is simple and easy, provided the diagnosis is properly made between that class and symptomatic or constitutional eruptions. The three important indications are—First, to destroy the parasite; secondly, to remove the inflammatory affections which are due directly or indirectly to its presence; thirdly, to treat the constitutional eruptions which are often complicated with parasitic affections. The destruction of the parasite, M. Bazin regards as the principal indication upon which a hopeful anticipation of cure may be founded. The parasitic growth is a foreign body, a thorn, which is the cause of all the local irritation; and it is our duty, says M. Bazin, in spite of the intensity of inflammatory symptoms and the extent of surface affected, to extract this thorn, when we may see the symptoms of inflammation extinguished as if by enchantment.

Internal medication has no influence upon these cases, for the preparations employed either do not reach the affected part or are decomposed before they get there. The agents employed externally for the treatment of these affections are classified as *phyticides* and *insecticides*, according to their destructive action on vegetable parasites or animal parasites. Of the former class, M. Bazin prefers the *huile de cade*, (oil of cade,) a liquid tar, derived from the combustion of the wood of the juniperus oxycedrus, and resembling oil of turpentine; corrosive sublimate, and turpeth mineral, or the yellow sulphate of mercury. Of the agents which act most powerfully upon insect parasites, sulphur holds the first place in his opinion, the *huile de cade* and staphisagria or stavesacre being the next most reliable. Anti-parasitic agents may be employed in a semi-solid state, as in the form of ointments, pommades, and liniments, applied by inunction or by gentle or coarse friction; sometimes in the liquid state, as baths, and lotions of different kinds; and occasionally in the gaseous state, as by vapor douches and sulphureous fumigations. The ordinary excipients of *parasiticide* agents are water, oil of sweet almonds, glycerin, spermaceti, and lard; the latter, however, being objectionable from its liability to decomposition by keeping. Where the parasite is deeply seated, as in folliculous parasitic affections, epilation, or the extraction of the hairs by the roots by means of pincers, is recommended in addition to the employment of other agents. Sometimes a single application of an anti-parasitic preparation may suffice; but it may be necessary to repeat it ten, fifteen, or twenty times, the complete destruction of the parasite being the only limit.

M. Bazin asks, rather self-importantly, and not at all flatteringly to his predecessors at Saint-Louis, "Why, before my time, did they not cure scabies (*gale*) at the Hôpital Saint-Louis? Because the value of friction was not appreciated. M. Cazenave, who had charge of the treatment, confined himself to partial friction over the hands, wrists, and feet, and the acari, spread over other parts of the body, being thus untouched, were not slow in reproducing the disease. If sometimes a permanent cure was effected, it was because the patient had rubbed not only his hands and feet, but also every part of his body in which he experienced an itching, and, in this way, had the good fortune to destroy all the animal parasites."

The second indication of treatment is to combat the inflammatory eruption produced either by the parasite or by the application of anti-parasitic medication. To effect this object, emollients, discutients, and antiphlogistics are employed; the most reliable of which are cold cataplasms, pommades medicated with calomel or the oxide of zinc, saturnine lotions, bran or starch baths, cold or vapor douches, and even topical blood-letting by leeches, or the employment of general blood-letting.

The third indication is to treat the various constitutional complications, such as herpetic, syphilitic, and scrofulous eruptions. This influence of parasitic and constitutional cutaneous affections upon one another is occasionally observed. Take, for example, the reciprocal action of syphilis and porrigo decalvans or tinea tondens: the former is often a predisposing cause of the latter, and the vegetable growth found at the roots of the hair in that affection—tricophyton tonsurans—frequently keeps up the syphiloid eruption.

The work of M. Bazin contains peculiar views of pathology, which may not be cordially adopted by other investigators on the same topics, and perhaps occasionally exhibits a more dogmatical and self-lauding spirit than may be absolutely agreeable to those whose theories he demolishes in a few words of disparagement. But it is interesting as a variation from the usual routine classification of the works on cutaneous diseases or cutaneous affections, as authors generally—but not M. Bazin—indiscriminately call them. It is doubtful whether the majority of pathologists will agree with M. Bazin, that the cutaneous affection is the natural sequence of the presence of parasites, but that many of them will prefer the theory that the morbid surface implicated affords a convenient nidus for the propagation and development of the parasitic growth. Under the latter view, the system of medication previously recommended would also be beneficial by setting up a new action in the part, and preventing the growth of the parasite.

Art. VI.—*The Use and Abuse of Tobacco.* By John Lizars, late Professor of Surgery to the College of Surgery, and lately Senior Operating Surgeon to the Royal Infirmary of Edinburgh. From the eighth Edinburgh edition. 12mo., pp. 128. Philadelphia: Lindsay & Blakiston, 1859.

Millions of dollars are annually spent in the consumption of tobacco. In Great Britain the amount used in 1853 was nearly 30,000,000 pounds, being considerably more, on an average, than one pound to every man, woman, and child in the United Kingdom. In this country, where every male, from the beardless boy to the old man trenching on the verge of the grave, chews and smokes, the consumption of the "weed" must be enormous; and what strikes one as particularly unfortunate is, that so much soil and labor should be wasted in the cultivation of such a villainous plant, which does no other good than to tickle the nose and palate, while the mischief it does is incalculable. No physician or surgeon, now-a-days, uses tobacco as a medicinal agent. The tobacco enema, once so much employed in the treatment of strangulated hernia, has been entirely discarded since the introduction of chloroform and ether. Mr. Macilwain, of London, is perhaps almost the only respectable surgeon who still resorts to the practice.

Of all the forms in which tobacco is used that of smoking is undoubtedly the least offensive, but even that is sufficiently disgusting. Napoleon said it was a habit only fit to amuse sluggards. It is difficult to conceive how a confirmed chewer can be tolerated by a delicate and refined wife. His filthy mouth and horrid breath must be an abomination to her. Then, look at the nasty nose of the man who habitually takes snuff; see how he frets his nasal proboscis, how he blunts the sense of smell, and how he excites the flow of mucus. Oh, what a beast! What a sad perversion of man's noble organs! But so it is. We may write, and talk, and scold about the use of tobacco as long as we please, and still chewing, and smoking, and snuffing will go on at the same pace as ever—perhaps, indeed, all the faster for our opposition: such is the world's stubbornness. If we were an autocrat we should send every one to the mines that indulges in these filthy practices, and confiscate his estate in the bargain; nay, more, we should deny him the benefit of clergy in his dying moments. We should eradicate the use of the poisonous weed at all hazard, even at the risk of exterminating a goodly portion of the human race. Why should we hesitate? for, if Mr. Lizars and other writers, who have so profoundly investigated this matter, are to be believed, a rapid degeneration is going on, affecting every part of man's body, and threatening to reduce him to the most abject physical and mental condition. One of the most degrading of these effects is a diminution of stature, a process which, in time, may—*mirabile dictu!*—change us to the condition of Lilliputians, and thus wickedly thwart God's providence in regard to the world's destiny. The contemplation of such a scene is most painful, and yet it is precisely what, if we implicitly believe these writers, may ultimately occur.

While we fully credit all that Mr. Lizars so earnestly inculcates in this little brochure concerning the degenerating influences of tobacco upon man's stature and mental powers, we are obliged to dissent from him in regard to other subjects, which, although well argued, are not so well sustained by sound logical deductions. We allude more particularly to the idea that smoking and chewing are a frequent cause of cancer of the tongue, lip, and gums. We have seen many cases of this disease in these situations, and not a few in persons that had never employed tobacco in any form whatever. We are sure that Mr. Lizars is not borne out in his conclusions in his statements of this subject. The concurrence of carcinoma of these parts and of the use of this nasty weed is sufficiently common, but it does not thence follow that they should be viewed in the light of cause and effect. A careful study of the subject has satisfied us that the development of the disease may, under such circumstances, be readily explained by the laws of coincidence. Our author has some very curious notions about this matter. We quote the following paragraphs in illustration of our position:—

> "From the cases I have recorded, I may presume that a person with a cancerous diathesis, or predisposition or constitution, smoking a cutty pipe, must be liable to communicate the disease to another who might take up the same pipe.
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> "In the syphilitic constitution, the mucous membrane of the mouth is very prone to excitement and ulceration; and if the latter is produced by smoking tobacco, the ulceration, in nine cases out of ten, will degenerate into cancerous or cancroid ulceration, and prove fatal, after lingering and cruel sufferings."

Surely our learned author cannot be in earnest when he makes such statements; such assertions may do very well to frighten persons who smoke and chew, but there is no pathologist, of the least sense or experience, who would accord to them his approval. Really, Mr. Lizars, this will not do; we hate and detest tobacco in all its forms, except when it is used for killing vermin; but we cannot, in any manner in which we can "fix" it, indorse the far-fetched and unphilosophical conclusions arrived at in the above quotations. If the "cutty pipe" can perform such wonders, we confess that we have never, in a practice of no mean extent, witnessed any proof of it.

Mr. Lizars, while on the subject of cancer of the tongue, indulges in some conjectures regarding the minute structure of that organ, and enters his caveat against its removal when affected with malignant disease. He refers to two cases in which the tongue was excised by Mr. Syme, both of which terminated fatally, and he evidently introduces the notice in order that he may give that gentleman a thrust under the rib. One would have supposed, he remarks, that such a result would have made any surgeon acquainted with pathology pause before excising such a vascular organ lying so near the lungs. But, as John Bell says, operations have come to represent at last the whole science. Such seems to be the case at least in the opinion of the so-called "First Surgeon in Europe."

Mr. Lizars and Mr. Syme evidently dislike each other, and so our tobacco warrior seizes the occasion, dragged in, *vi et armis*, to spit a little of the juice of the weed into the face of the so-called "First Surgeon in Europe." Edinburgh has long been famous for its medical quarrels.

We close our notice of this little treatise with no great prepossessions in its favor. Mr. Lizars has collected many facts of interest, but we are far from thinking that he has made the best use of them. Nevertheless, the work is very readable, and we therefore bespeak for it an attentive perusal.

ART. VII.—*A Guide to the Practical Study of the Diseases of the Eye: with an Outline of their Medical and Operative Treatment.* By JAMES DIXON, F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital, Moorfield; formerly Assistant Surgeon to St. Thomas's Hospital. Second edition. Royal 12mo., pp. 431. John Churchill: London, 1859.

IT affords us much pleasure to be able to chronicle the appearance of a new edition of this work so soon after its original publication. The author must be greatly gratified with this evidence of the success of his literary labors, especially when we recollect the competitors which the work has in the treatises of Lawrence, Mackenzie and Jones, to say nothing of the numerous English monographs upon various subjects of ophthalmic medicine and surgery. The Review was among the first of the medical periodicals on this side of the Atlantic to point out the merits of Dr. Dixon's Guide, and to recommend it to the favorable notice of the American profession. An attentive perusal of it, soon after its publication, satisfied us that it was the most able manual on the diseases of the eye that had yet appeared in the English language; and a careful examination of the present edition has only served to corroborate that impression.

In preparing for the press a second edition of this work, the author has not considered it proper to amplify it by any considerable increase in the number of its pages; but has constantly kept in view his original plan of furnishing a practical manual on the subjects of which he treats. Some of the chapters have been re-arranged; and the section on the ophthalmoscopic appearances of the choroid and retina has been re-written, so as to render it more conformable to our present knowledge. The volume, like its predecessor, is gotten up in superior style, and reflects great credit both upon the author and publisher. We heartily wish that some competent person would enrich our literature with just such a production.

ART. VIII.—*A Practical Treatise on the Diagnosis, Pathology, and Treatment of the Diseases of the Heart.* By AUSTIN FLINT, M.D., Professor of Clinical Medicine in the New Orleans School of Medicine; Physician to the New Orleans Charity Hospital, etc., etc. 8vo., pp. 473. Philadelphia: Blanchard & Lea, 1859.

THE treatise of Professor Flint reached us too late to permit us to do anything more than simply to announce its publication. An elaborate notice, from the pen of one of our most able and learned collaborators, will appear in our next issue. A cursory examination of the work satisfies us that it is a highly meritorious production, destined to secure a permanent place in the medical literature of the country.

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Original Communications.

ART. I.—*Contributions to Obstetric Jurisprudence.* By HORATIO R. STORER, M.D., of Boston.

CRIMINAL ABORTION. (CONCLUDED.)

VIII. CAN IT BE AT ALL CONTROLLED BY LAW?

To this important question I do not hesitate to give an unqualified answer in the affirmative. The fact that criminal abortion is not controlled by law anywhere, cannot be entertained as a valid argument to the contrary of this assertion; for it is equally the fact, as we have seen, that laws against abortion do not as yet exist, which are in all respects just, sufficient, and not to be evaded.

It is evident that in aiming to suppress this crime, the law should provide not merely for its punishment, but indirectly as well as directly, and so far as possible, for its prevention. The punishment of a crime cannot be just, if the laws have not endeavored to prevent that crime by the best means which times and circumstances would allow,* and this is to be accomplished by a twofold process: by rendering on the one hand its detection more probable, and on the other its punishment more certain.

As indirect though important measures for the former of these ends, we have already mentioned laws for registration,† and against concealment of births and secret burials. As a single proof of their possible influence in this respect, out of many that might be adduced, we instance the fact that in Paris the number of premature fœtuses deposited at the Morgue, during the nine years, from 1846 to 1854, inclusive, was found to exceed by more than two-thirds that of the full decade just preceding, from 1836 to 1845.* To render this difference more apparent, we have compiled the following table:—

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* BECCARIA, Crimes and Punishments, 104.

† "An efficient and practical remedy for the prevention of this crime would be a law requiring the causes of death to be certified by the physician in attendance, or

Age of fœtuses deposited.	Ten years: 1836–1845.	Nine years: 1846–1854.
From 2 to 3 months	21	58
" 3 to 4 "	35	73
" 4 to 5 "	56	102
" 5 to 6 "	69	82
Total	181	315

Part of this advance, it is true, is attributable to the increase in the population of Paris, and in the prevalence of criminal abortion, but in great measure it is clearly owing to the enforcement of a more rigid law against secret burials. The above remarks are strikingly corroborated by the fact that of trials for the crime, and we must not forget that these bear but a small ratio to the whole number of cases preliminarily investigated,† there were in France, during the latter of these periods, fully four times the number occurring from 1836 to 1845.

The establishment of foundling hospitals, by the State governments, has been urged as a preventive of the crime, and, on the other hand, fears have been expressed lest the same means should increase it. For ourselves, however, and from some experience in such cases, we believe that these fears are groundless, and that with equal justice might they be entertained of every large charity having for its end the improvement, sanitary or otherwise, of the masses of society.

We have quoted a statute existing in Massachusetts, though practically unenforced, against one great agent in the increase of abortion, an abuse

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where there has been no physician, by one called in for the purpose. In this way the cause of death, both in infants and mothers, could be traced to attempts to procure abortion. In three cases which occurred in Boston, in 1855, the death was reported by friends to be owing to natural causes, and in each it was subsequently ascertained that the patient died in consequence of injuries received in procuring abortion. It is probable that such cases are by no means rare; and if the cause of death were known, an immediate investigation might lead to the detection of the guilty party." (Boston Med. and Surg. Journal, Dec., 1857, p. 365.)

* Register of the Morgue.

† From 1846 to 1850, 188 cases of criminal abortion were discovered in Paris, but for want of proof, only 22 of them were sent to trial. (Comptes Rendus Ann. de la Justice Criminelle.)

of its license by the public press. Were such laws to become general, and to be faithfully executed, and were it also made penal to sell any drug, popularly known as emmenagogue, except as advised by physicians, just as the sale of direct poisons is, or should be, controlled by law, the present system of openly advertising by abortionists would undoubtedly be brought to a close.

In no matter is it of more importance than in cases of suspected criminal abortion, that coroners should be intelligent and well educated medical men; and we could wish that this point might have received especial attention from Dr. Semmes, in his late admirable report to the American Medical Association.* In the sudden excitement of an inquest, the guilty are more likely than at a later period to be off their guard, and evidence may often be elicited at this time, which, at the subsequent trial, it would be impossible to obtain. There can be no question of the importance of this point; the coroner should be skilled in all that pertains to obstetric jurisprudence; and if similar knowledge were more generally possessed by other officers of justice, attorney, juror, and judge, a far greater number of convictions, under a proper law, would be secured.

As regards the more direct statutes, we have already considered their important points.

"In order to render laws effectually preventive," has wisely been said, "they should be consistently framed, and based on justice."† In accordance with this truly axiomatic doctrine, and with various rulings of the courts, already quoted, no proof should be demanded which is not necessitated by the actual character of the crime. We have seen that neither in intent nor in fact is this an attempt against the person or life of the mother. If she die in consequence, the offender is already amenable for it as homicide; in the absence of any special statute, at common law. The crime, both in intent and in fact, is against the life of the child.

The attempt being proved, it is unnecessary that it should have been consummated, not merely the completion of a crime bringing its punishment, but also certain overt acts with intent to the perpetration; nor is it requisite that any injury, specific or general, should have been inflicted upon the person of the mother.

The offence being of equal guilt throughout pregnancy, proof of quickening, the incident, not the inception of vitality,—indicating neither the commencement of a new stage of existence, nor an advance from one stage to another,—‡ and, therefore an element without the slightest intrinsic value, should not be required.

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* Report on the Medico-legal duties of Coroner. 1857.

† RADFORD, British Record of Obstetric Medicine, vol. i. p. 55.

‡ WHARTON, Criminal Law, 540.

The crime of abortion should be considered to include, as it does in the absolute fact of moral guilt, all cases of attempted or intentionally effected destruction and miscarriage of the product of impregnation; and this, whether it be living or dead, normal or abnormal, which last expression equally comprehends instances of moles, hydatids, extra-uterine conception, acephalous, anencephalous, and other monsters.

Proof should not, as now, be required of intent to destroy the child.* This should be considered shown by the intent to produce miscarriage, in the absence of lawful justification therefor; the act in all stages of pregnancy being attended with great danger to the child, and, in much more than a moiety of the period, necessarily fatal to it.

The attempt being considered criminal, it follows that proof of pregnancy is not necessary, and that conviction should be had though it were proved that pregnancy did not exist,† even that the woman on whom the abortion was attempted, however unlikely, was still a virgin.‡

No discrimination should be made as to the means criminally employed, and an escape thus afforded to the guilty; as we have seen still obtaining in Great Britain and many of our own States.

The mother, almost always "an accessory before the fact," or the principal, should not, as now, be allowed almost perfect impunity. There is no valid reason for such exemption, there is every reason against it. The woman is covered by the laws of most continental nations of Europe,—France, Austria, Germany, Bavaria, and Italy,—and by many of them her punishment, if married, is greatly increased. Similar severity is also exercised in these countries against the father of the fœtus, if he too is implicated in the crime.

To allow that abortion is extenuated in the unmarried, it has been said, will "to the moral and political philosopher appear to have exalted the sense of shame into the principle of virtue, and to have mistaken the great end of penal law, which is not vengeance, but the prevention of crime. Law, which is the guardian and bulwark of the public weal, must maintain a steady and even rigid watch over the general tendencies of human actions."§ But, on the other hand, "the measure of punishment should be proportionate, as nearly as possible, to the temptation to offend, and to the kind and degree of evil produced by the offence."||

We have seen the increase in moral guilt, and of opportunity for commission and for escape, in the case of nurses, midwives, and other classes

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* Smith *vs.* The State, 33 MAINE, (3 RED.) 48.

† Rex *vs.* Phillips; Regina *vs.* Goodall; Reg. *vs.* Haynes, etc.

‡ TAYLOR, Med. Jurisprudence, p. 386.

§ PERCIVAL, Medical Ethics, p. 84.

|| Ibid., p. 85.

of persons, who, from their profession, are brought more directly into contact with pregnant women. By the penal code of Napoleon the First, remarkable in so many respects for the wisdom of its provisions, an increase of punishment was enacted for abortion criminally induced or advised by physicians, surgeons, or other officers of health, including midwives, or by druggists;* their guilt being enhanced by their greater opportunities and knowledge.

Punishments for the crime of abortion should not, as is now generally the case, be so framed as to render the statute, in fact, if not in name, simply nugatory. Were the murder of adults to be made answerable by merely a year or two in prison, far more convictions than at present would undoubtedly be secured; but it is certain that the instances of the crime would be fearfully increased. We have reason to believe that it is precisely thus with the case in hand.

A standard of justification for the instances of necessary abortion should be fixed by law. If perfection in this respect be impossible, let the nearest approach be made to it that can. Since my remarks upon the relative rights of the mother and fœtus to the chance of life in doubtful cases were published in a former paper of the present series, I have received from Dr. Rattenmann, late of Tübingen, an essay, written by himself, in which this question is discussed at length, and the repetition of abortion upon the same individual, in the early months of pregnancy, is defended. I have carefully considered the several arguments advanced by the gentleman, and am compelled to adhere to the views I have already expressed.

In presenting a report upon the matter, in 1857, by direction of the Suffolk District Medical Society of Massachusetts, the writer offered the draft of a law, prepared after much thought and consultation with legal as well as with medical men, and embodying the suggestions made above. This was intended for the consideration of the Legislature of the State, in the hope that it might be of aid toward a modification of the present defective law.

Having seen no reason to change the opinions then avowed, but, on the contrary, receiving constant confirmation of their truth, I now present the essential portions of that draft, acknowledging most willingly that its wording may, perhaps, with safety, be simplified and condensed; but contending, in all sincerity and earnestness of purpose, that its general tenor is what justice and humanity alike, and imperatively, demand at the hands of society.

"Whoever, with intent to cause and procure the miscarriage of a woman, shall sell, give, or administer to her, prescribe for her, or advise, or direct, or cause, or procure her to take any medicine, or drug, or substance whatever, or shall use, or employ, or advise any instrument, or other means whatever, with the like intent, unless the same shall have been necessary to preserve the life of such woman, or of her unborn child, and shall have been so pronounced (in consultation) by two competent physicians; and any person, with the like intent, knowingly aiding and assisting such offender or offenders, shall be deemed guilty of felony," etc. etc.; "and if such offence shall have been committed by a physician, or surgeon, or person claiming to be such, or by a midwife, nurse, or druggist, such punishment may be increased at the discretion of the court."

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* Loc. cit., article 317.

"Every woman who shall solicit, purchase, or obtain of any person, or in any other way procure, or receive, any medicine, drug, or substance whatever, and shall take the same, or shall submit to any operation or other means whatever, or shall commit any operation or violence upon herself, with intent thereby to procure a miscarriage, unless the same shall have been by two competent physicians (in consultation) pronounced necessary to preserve her own life, or that of her unborn child, shall be deemed guilty," etc. etc.; "and if said offender be a married woman, the punishment may be increased at the discretion of the court."

It was also advised that the encouragement of criminal abortion, by publication, lecture, or otherwise, or by the advertisement, sale or circulation of such publication, should be made penal, and that the present well worded statute against the personal advertisements of abortionists, and their nostrums, should be rigorously enforced.

To the words now quoted were added, and they are still applicable, the following:—

"We have aimed at a statute, which, while it better defined this atrocious crime, and covered the usual grounds of escape from conviction, established also the proper standard of competence in all medical questions involving issues of life and death. We believe that it would be the means of preventing much of the present awful waste of human life. But enforce such a law, and the profession would never allow its then high place in the community to be unworthily degraded; nor, as now, would those be permitted, unchallenged, to remain in fellowship, who were generally believed guilty, or suspected even of this crime."*

In the same belief, strengthened by nearly three years careful reflection, that criminal abortion can, to a great extent, be controlled by law, if but the community so will, we proceed to the last division of our subject, and discuss the duty of the medical profession toward the ultimate suppression of the crime.

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* Report to Suffolk District Med. Society, May, 1857, p. 12.

IX. THE DUTY OF THE PROFESSION.

I have stated that the prevalence of criminal abortion is in great measure owing to a seeming neglect of fœtal life on the part of medical practitioners, and that in other degree it is attributable to ignorance by the community of the actual character of the offence, an ignorance of physiological facts and laws; and on both these points abundant proof has been afforded of the truth of my assertions.

I have also stated that medical men, in all obstetric matters, are the physical guardians of women and their offspring; a proposition that none can deny.

We have seen that unjustifiable abortion, alike as concerns the infant and society, is a crime second to none; that it abounds, and is frightfully on the increase; and that on medical grounds alone, mistaken and exploded, a misconception of the time at which man becomes a living being, the law fails to afford to infants and to society that protection which they have an absolute right to receive at its hands, and for the absence of which every individual who has, or can exert, any influence in the matter, is rendered so far responsible.

Under these circumstances, therefore, it becomes the medical profession to look to it, lest the *whole* guilt of this crime rest upon themselves.

And, in the first place, it might be asserted with some truth, that such is indeed the case. For, on the one hand, it was from physicians, as is proved by early medical literature, that the mistaken notions, both of the law and of the people, regarding intra-uterine vitality, were derived; and on the other, the apathy and silence still existing on this subject among medical men, though thousands and hundreds of thousands of human lives are thus directly at stake, and are annually sacrificed, can only be explained on one of two suppositions,—either that we do not yet really believe in the existence of fœtal life, though professing to do so, or that we are too timid or slothful to affirm and defend it. By the one alternative a gross lie seems proved; by the other a degrading and strange inconsistency.

But, I believe, this apparent negligence proceeds only from ignorance of the real duty of the profession. It is my aim, while setting forth a deliberate and carefully prepared opinion upon this point, to inspire, if possible, in my fellow-practitioners throughout the land, somewhat of the holy enthusiasm sure in a good cause to succeed despite every obstacle, and an earnest, uncompromising hostility to this result of combined error and injustice, the permitted increase of criminal abortion.

Enough has already been said to show that there is need of increased vigilance on the part of medical men, lest they themselves become innocent and unintentional abettors of the crime.* If, on the other hand, the community were made to understand and to feel that marriage, where the parties shrink from its highest responsibilities, is nothing less than legalized prostitution, many would shrink from their present public confession of cowardly, selfish and sinful lust. If they were taught by the speech and daily practice of their medical attendants, that a value attaches to the unborn child, hardly increased by the accident of its birth, they also would be persuaded or compelled to a similar belief in its sanctity, and to a commensurate respect.

But it is asked, is our silence wrong? Is there not danger otherwise of increasing the crime? These are the questions not of wisdom, or prudence, or philanthropy, but of an arrant pusillanimity. Vice and crime, if kept concealed, but grow apace. They should be stripped of such protection, and their apologists, thereby their accomplices, condemned. Answers, however, are ready at hand to the questions proposed.

"It is one of the great desiderata of registration, that more particularity should be observed in collecting facts relating to the subject of the still-born."†

"Has it been sought," society demands of the profession, "to account for the peculiarities relating to the still-born, and to combat the causes which in certain circumstances swell their number in so deplorable a manner?"‡

"An honest and fearless expression of these causes and circumstances, on the part of medical men, would bring to light an amount of knowledge that might be useful in checking this horrible and increasing waste of life."§

"Such an exercise of his knowledge, experience, and true moral courage, is not only the province, but the conscientious duty of the physician."||

"It should be constantly borne in mind, that there is here a high and

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* In this connection, I cannot too strongly deprecate a practice that has lately been proposed; the detection, namely, of the early existence of pregnancy by the administration of ergot. (Boston Med. and Surg. Journal, April, 1859, p. 197.) The use of ergot for this purpose, in however small a dose, would seem utterly unjustifiable.

† Fifteenth Massachusetts Registration Report, 1857, p. 199.

‡ QUETELET, Theory of Probabilities, p. 234.

§ New York Med. Gazette, Editorial; London Medical Times and Gazette, 1850, p. 487.

|| Boston Med. and Surg. Journal, Editorial, 1855, p. 411.

stern morality, that should stimulate the medical profession in the exercise of their utmost effort and ingenuity, with the view to master and disclose the secrets of these villainous practices; the more villainous, because they are very generally conceived in fraud, practiced in deception, upon innocent and unsuspecting victims, and result the most commonly in the destruction of two lives at once."*

"For ourselves, we have no fear that the truth in reference to the crime of procuring abortion, would do aught but good. It would appear that sheer ignorance in many honest people, is the spring of the horrible intra-uterine murder which exists among us; why not then enlighten this ignorance? It would be far more effectually done by some bold and manly appeal, than by the scattered influence of honorable practitioners alone. Will not the mischief, by-and-by, be all the more deadly, for delaying exposure and attempting relief?

"Whatever estimate may attach to our opinion, we believe that not only ought these things not so to be, but that the public should know it from good authority."†

"This is a topic which ought to be regarded of the highest interest to the profession and the public."‡

"It is by far the most important subject before the profession, and in its medical as well as moral bearings, appeals alike to our patriotism and humanity."§

"We think the public have very erroneous ideas of the turpitude of this crime, and we deem it our duty, as conservators both of the public health and morals, to set it in a correct light before them."||

"The question of criminal abortion is doubtless one of extreme difficulty; it is not, however, beyond the reach of the enlightened prudence and the firm will of the authorities. It is a subject of such vital import to society in general, that we feel convinced it cannot but awaken the anxious thought of the persons who, from their position, are entrusted with the application of the laws and the control of public morals."¶

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* DEAN, Medical Jurisprudence, p. 139.

† Boston Med. and Surg. Journal, Editorial, Dec. 13, 1855.

‡ American Medical Gazette, Editorial, July, 1857, p. 390.

§ Ibid., April 1859, p. 289.

|| Maine Med. and Surg. Reporter, Editorial, June, 1858, p. 39.

¶ DEVILLE, Researches on the proportion of still-born children compared with the mortality of the City of Paris during the thirteen years, 1846–58. Memoirs of the French Academy, 1859.

Whoever shall succeed in fixing upon it the attention it deserves, "has taken a stand in this matter alike creditable to his head and his heart, and we feel that he will receive the hearty thanks of every true physician."*

"The increasing prevalence of infanticide," which is but rare compared with criminal abortion, "its dangerous moral influence, the apathy with which so many regard its spread, and the very considerable difficulty in obtaining conviction, call loudly for reform. The question is one of national importance."†

"With this view of the case before us, I suggest it as our imperative duty to direct the attention of legislators to the importance of enacting a statute in conformity thereto."‡

Such are the confessions, independently given, of high-minded and honorable medical men. No more can be added, no less would have been true.

It must be granted, then, that a bold and manly utterance of the truth, combining as this must, contradiction of the error and denouncement of the crime, should be made by the members of the profession on every occasion. By this course it is plain that a healthier moral tone would be made to prevail in the community, the crime would become of rarer occurrence, and the laws, such as they are, would be more faithfully attempted to be enforced.

But it has been shown that the laws on the subject of criminal abortion are radically imperfect and defective, and that this is attributable, wholly, to a medical cause. We assert, therefore, that not only is it the duty of the profession as individual components of society, but more especially as medical men, to see them amended, and to leave no means untried, no effort unmade, for the attainment of this end.

"Physicians alone," says Hodge in his Introductory Address, "can rectify public opinion, they alone can present the subject in such a manner that legislators can exercise their powers aright in the preparation of suitable laws; that moralists and theologians can be furnished with facts to enforce the truth upon the moral sense of the community, so that not only may the crime of infanticide be abolished, but criminal abortion properly reprehended, and that women in every rank and condition of life may be made sensible of the value of the fœtus, and of the high responsibility which rests upon its parents."*

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* New Hampshire Journal of Medicine, Editorial, July, 1857, p. 216.

† London Lancet, Editorial, July, 1858, p. 66.

‡ TATUM, Virginia Med. Journal, June, 1856, p. 457.

It has been stated, indeed publicly avowed by a medical body,† that when a physician "shall become cognizant of any attempt unlawfully to procure abortion, either by persons in the profession or out of it, it shall be his duty immediately to lodge information with some proper legal officer, to the end that such information may lead to the exposure and conviction of the offender."

This doctrine is doubtless true to a great extent, but it cannot be applied to the confidential disclosures of patients themselves, which no man has a right to reveal, unless constrained by the direct command of the court, at which, it has been ruled, even professional secrets must be divulged.‡

It follows, from the evidence we have now adduced, that if it be the duty of the profession to urge upon individuals the truth regarding this crime, it is equally their duty to urge it upon the law, by whose doctrines the people are bound; and upon that people, the community, by whose action the laws are made.

And this should be done by us, if we would succeed in suppressing the crime, not by separate action alone, but conjointly, as the profession, grandly representing its highest claim,—the saving of human life.

Every step toward this end should be hailed with enthusiasm. The late action of the State Society of Massachusetts, directly resulting from professional agitation of the subject, deserves praise and imitation; the body referred to having passed a series of resolutions to the following effect: "That the Fellows of the Massachusetts Medical Society regard with disapprobation and abhorrence all attempts to procure or promote abortion, except in cases where it may be necessary for the preservation of the mother's life; and that no person convicted of such attempt, can, consistently with its by-laws, any longer remain a fellow of the society."§

But the mere passage of resolutions in disapproval of this horrible and so rapidly increasing crime is not sufficient to effect its abatement. Something more is wanted than the testimony of record books, the pointless vote of a board of councillors. There must come a hearty, earnest, and unanimous voice from the mass of the profession; an assertion that criminal abortion, or at least its permitted commission, shall no longer exist.

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* Loc. cit., p. 19.

† The Councillors of the Massachusetts Medical Society. Proceedings of the Society, 1858, p. 77.

‡ PHILLIPS, On Evidence, i. p. 135; RYAN, Medical Jurisprudence, p. 193; STORER, Sen., Introductory Address, 1855, p. 10; SIMPSON, Physicians and Physic, p. 31.

§ Proceedings of the Society, 1858.

Too much zeal cannot be shown by physicians in relieving themselves from the weight of responsibility they may have incurred by innocently causing the increased destruction of human life. Let it not be supposed by the public that there is among us, either in theory or practice, any disregard of the unborn child. If such impression have already obtained, from our own negligence, the falsehoods of irregular practitioners, or otherwise, it should at once be removed. Fœtal life ever is, and ever has been, held sacred by all respectable physicians, and whenever criminal abortion has been known to have been advised, perpetrated or abetted by one claiming our honorable name, he has invariably and at once lost all professional standing.

We have seen that it is no trifling matter, this awful waste of human life. It is a subject that demands the best efforts of the whole profession as a body and as men. The crime, no longer practiced in secret, must be met boldly; and met with unanimity, it will be met successfully.

But whether these efforts are to be at once decisive or not, whether they are to be received with the gratitude of the community or its disfavor, is no concern of ours. Our duty is very plain; it is to stand, irrespective of personal consequences, in the breach fast making in the public morality, decency, and conscience, and, to the best of our strength, to defend them.

It might be, it very likely would be, for our immediate pecuniary interest, as a profession, to preserve silence; for we have shown that abortions, of all causes, tend to break down and ruin the health of the community at large. But to harbor this thought, even for a moment, were dishonorable. "I will never set politics against ethics," said Bacon, "for true ethics are but as a handmaid to divinity and religion."

We must take this decided stand, there is no choice; else we are recreant to the high trust we have assumed, and to ourselves. Whether the suppression of abortion be effected or no, one thing is certain, our own hands will have been cleansed of this sea of blood. We shall have declared our abhorrence and our innocence of the crime.

Longer silence and waiting by the profession would be criminal. If these wretched women, these married, lawful mothers, aye, and these Christian husbands, are thus murdering their children by thousands, through ignorance, they must be taught the truth; but if, as there is reason to believe is too often the case, they have been influenced to do so by fashion, extravagance of living, or lust, no language of condemnation can be too strong.

Let us, then, meet the issue earnestly and boldly. Silence and patient expectance have been fairly tried; the disease is not self-limited; the evil, instead of working its own cure, has assumed a gigantic, an awful growth.

Abstract discussions of this matter, by ourselves, and within the closed doors of our several societies, no longer avail. We are all agreed upon the guilt of abortion; we ever have been. Our prayers for its suppression have not been answered, for they have hitherto been offered with inactive hand.

We should, as a profession, openly and with one accord appeal to the community in words of earnest warning; setting forth the deplorable consequences of criminal abortion, the actual and independent existence, from the moment of conception, of fœtal life. And that the effort should not be one of words merely, we should, as a profession, recommend to the legislative bodies of the land, the revision and subsequent enforcement of all laws, statutory or otherwise, pertaining to this crime,—that the present slaughter of the innocents may to some extent, at least, be made to cease. For it is "a thing deserving all hate and detestation, that a man in his very originall, whiles he is framed, whiles he is enlived, should be put to death under the very hands and in the shop of nature."*

In conclusion; a committee, consisting of Drs. Blatchford, of New York, Hodge, of Pennsylvania, Pope, of Missouri, Barton, of South Carolina, Lopez, of Alabama, Semmes, of the District of Columbia, Brisbane, of Wisconsin, and the writer, was appointed by the National Medical Association, at its meeting at Nashville, in 1857, to report upon criminal abortion, with a view to its general suppression. The report of this committee, brief, but in strict accordance with the series of papers now ended, has lately been made to the Association, at its session held at Louisville, in May of the present year. The report was accepted, and the resolutions appended to it† were *unanimously* adopted.

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* Man Transformed. Oxford, 1653.

† "*Resolved*, That while physicians have long been united in condemning the procuring of abortion, at every period of gestation, except as necessary for preserving the life of either mother or child, it has become the duty of this Association, in view of the prevalence and increasing frequency of the crime, publicly to enter an earnest and solemn protest against such unwarrantable destruction of human life.

"*Resolved*, That in pursuance of the grand and noble calling we profess,—the saving of human life,—and of the sacred responsibilities thereby devolving upon us, the Association present this subject to the attention of the several legislative assemblies of the Union, with the prayer that the laws by which the crime of abor-

In behalf of the committee, of whom he had the honor to be chairman, the writer cannot close this portion of his labors without thanking the physicians of the land, represented as they are by the Association, for their hearty and noble response to the appeal that has been made them. He would express, were it possible, the gratitude not of individuals, but society; for by this act the profession has again been true to "its mighty and responsible office of shutting the great gates of human death."

II.—*Some Remarks on Cardiac Hypertrophy and Dilatation.* By Austin Flint, M.D., Professor of Clinical Medicine, etc., in the New Orleans School of Medicine.

Correct views respecting the two forms of enlargement of the heart—hypertrophy and dilatation—especially as regards the abnormal circumstances under which they are produced, their relations to each other, and the effects of each, are important on account of their direct practical bearings. The clinical study of cardiac diseases has lately led to a complete reversal of certain ideas connected with hypertrophy; and the consequence is, a reversal of the practice which, until quite recently, the existence of this form of enlargement was supposed to require. But there is reason to believe that this change is not so generally known or so fully appreciated by practitioners of medicine as, in view of its importance, is to be desired. This consideration mainly has determined the selection of the subject of this article. I shall endeavor in a few remarks to embody a concise expression of practical views which it is believed are in accordance with sound pathology, as well as with the conclusions drawn from clinical experience, and which, if not in some respects original, have not, as it seems to me, been fully presented, and their application to practice sufficiently considered.

Hypertrophy and dilatation are effects of an obvious mechanical obstruction to the circulation, in the great majority of cases. It is probable that in the comparatively few instances in which an obstacle is not apparent, it nevertheless exists. This remark is, however, more

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tion is attempted to be controlled may be revised, and that such other action may be taken in the premises as they in their wisdom may deem necessary.

"*Resolved*, That the Association request the zealous co-operation of the various State medical societies in pressing this subject upon the legislatures of their respective States, and that the president and secretaries of the Association are hereby authorized to carry out, by memorial, these resolutions."—*Transactions of the Am. Med. Association*, 1859, vol. xii. p. 75.

applicable to hypertrophy than to dilatation. Practically, it may be assumed that if the heart be hypertrophied, there either is, or has been, over-accumulation within the cavities of the heart from some impediment to the free passage of the blood either through the cardiac orifices or the vessels. In by far the greater proportion of cases the obstacle arises from valvular lesions, which occasion either obstruction or regurgitation, or both; and it will suffice for the present purpose to limit the attention to hypertrophy and dilatation occurring as consequences of these lesions.

Valvular lesions give rise to hypertrophy and dilatation, which, when death results from disease of the heart, are usually found to be combined in variable proportions. It is rare to find hypertrophy without dilatation, or dilatation without hypertrophy. Both forms of enlargement are alike consequences as valvular lesions, but the latter do not give rise indifferently to the one or the other form. What are the laws which govern their mutual relations? In answer to this question the following may be stated, as deductions from clinical facts: Hypertrophy is uniformly the first form of enlargement produced as a consequence of an obstacle to the circulation, provided the muscular structure of the heart be unaltered and its vigor unimpaired. Hypertrophy, under these circumstances, precedes dilatation. The two forms of enlargement do not, as stated by some writers, go on together from the commencement, but dilatation begins after hypertrophy has been going on for an indefinite period. In the course of time, dilatation is as inevitable as the precedence of hypertrophy is invariable. These laws hold good except in the cases in which the walls of the heart are the seat of fatty degeneration, or other changes, or the muscular power of the organ from any cause has been permanently impaired. The following are clinical facts leading to the foregoing deductions: In persons affected with valvular lesions, together with more or less cardiac enlargement, who are cut off by some intercurrent or incidental affection before suffering from any marked symptoms referable directly to the heart, examination after death shows hypertrophy either existing without dilatation, or greatly predominating over the latter. *Per contra*, in persons who die after a protracted duration of disease of the heart, having presented before death characteristic symptoms, such as dyspnœa, lividity, and general dropsy, dilatation is found to predominate over hypertrophy.

The production of hypertrophy, in view of the obstacle which occasions it, is compensatory. In health the vigorous contractions of the ventricles are complete; that is, the blood is entirely expelled, leaving the ventricular cavities void at the close of the systole. It is not easy to demonstrate this, but proof was afforded in a case falling under my observation of mitral lesions, in which a small mass of calcareous deposit projected from the ventricular aspect of the anterior curtain of the valve. Directly opposite to this mass, the endocardial membrane, over a space corresponding in size, was opake and thickened,—in fact, calloused, the membrane surrounding this spot being perfectly normal. The callosity was obviously due to long-continued repetitions of forcible contact with the calcareous mass, thus showing that the endocardial surfaces are brought into apposition by the systolic contractions. For this completeness of the ventricular contractions to continue when an abnormal obstacle to the circulation exists—for example, let it be supposed that the aortic orifice is contracted—the power of the contractions must be increased proportionally to the impediment caused by the contraction of the orifice. This increased power is a result of the obstacle to the egress of blood through the aorta, and the consequence is, increased muscular growth, or hypertrophy of the left ventricle. This increased growth imparts to the ventricle a greater amount of power, so that its capability to compensate for an increasing difficulty is extended in proportion to the progress of the hypertrophy, the latter, conversely, keeping pace with the increase of the obstacle due to the progressive obstruction at the orifice of the aorta. The same results follow when lesions, either obstructive or regurgitant, are situated at the mitral, tricuspid, or pulmonic orifices, the difference being chiefly as regards the ventricle first affected. The laws are, *first,* augmentation of muscular power compensating for the obstacle, or proportionate to the undue accumulation of blood in one or both of the ventricular cavities; *second,* increased muscular growth or hypertrophy; *third,* greater capability of exerting muscular power, proportionate to the amount of hypertrophic enlargement.

It is evident from this view of the immediate pathological consequences of valvular lesions, that hypertrophy is a conservative provision designed to obviate ulterior morbid effects. This idea, however, has but recently been appreciated, or, at all events, it is only of late that it has began to exert its legitimate influence on practice. Practitioners have aimed to diminish the hypertrophy, or prevent its further progress; and for this end potent measures have been resorted to, viz., copious blood-lettings and other methods of depletion, low diet, and as much quietude as possible. So far from these objects of treatment being desirable, they conflict directly with conditions on which the comfort and safety of the patient depend. The practitioner should strive rather to maintain the hypertrophy, and to govern its increase in proportion to the increasing impediment to the circulation due to progressive valvular lesions. The existence of hypertrophy does not call for measures to lower the powers of the system and weaken the heart, but, on the contrary, the body should be well nourished, and the vigorous action of the ventricles promoted.

Not only are depletory and debilitating measures uncalled for by the hypertrophy, but an opposite plan of treatment is indicated, viz., a good diet, tonic remedies, and exercise so far as it can be taken without a sense of discomfort. It is somewhat difficult at once to receive practical views diametrically at variance with those which have hitherto guided medical practice, under the sanction of high authority; but clinical observation, as well as sound pathology, shows the importance of hypertrophy as a conservative provision against the secondary and remote evils arising from valvular lesions. As a rule, these lesions, so far as symptoms are concerned, are latent while the impediment to the circulation which they occasion is compensated for by the muscular growth of the heart. This period of latency often lasts for many years. Persons experience no inconvenience from symptoms referable to the heart, leading them to be apprehensive of cardiac disease. They do not go to the physician with ailments dependent on the condition of the heart for a long time after the lesions of the valves have induced hypertrophy. The existence of cardiac disease at this stage is often ascertained incidentally, patients coming under observation with various affections which have no direct connection with the heart. Moreover, of persons affected with valvular lesions and hypertrophy, they have remained for the longest period exempt from distressing symptoms referable to the cardiac disease, who have continued to live well and take abundant exercise, not being fully aware of their condition, and not subjected to debilitating medication. My own observations furnish a number of instances strikingly illustrative of this remark. Numerous cases have been reported by Dr. Stokes and others. In fine, the alternative being between hypertrophy and dilatation, in cases of valvular lesions which by obstruction or regurgitation occasion an impediment to the circulation through the heart, the former is not merely to be preferred as a choice of evils, but it is highly important as a protection against the latter.

Hypertrophous enlargement of muscular organs has its bounds. Having attained to a certain size, their further increase is impossible. The heart, like the voluntary muscles, in addition to its normal extent of development, has a capacity for only a definite amount of abnormal growth. The restriction to hypertrophy is inherent in the muscular tissue. Extrinsic circumstances cannot carry the growth beyond a fixed point. On what does this intrinsic limitation depend? This inquiry cannot be answered without more knowledge of the mechanism of muscular growth than has as yet been acquired. It appears not to be settled demonstratively whether the muscles increase in size by the formation of new fibrils or by the enlargement of those already formed. In the one case, hypertrophy involves a hypergenesis of the structural elements; in the other case, the process is simply exaggerated nutrition. The former is to be inferred from the extent of the capacity of the muscles for hypertrophous enlargement. This intrinsic capacity, as regards the heart, probably varies in different persons. The limits of hypertrophy having been reached, and the impediment to the circulation persisting, dilatation necessarily follows. So soon as the muscular power of the ventricles is inadequate to completeness of contraction, and the walls of the heart meet with a resistance from the blood accumulated within the cavities, which they cannot overcome, dilatation becomes a necessity. From this epoch dilatation goes on with a rapidity, other things being equal, proportionate to the distention of the ventricles from over-accumulation. In this way dilatation becomes combined with hypertrophy, and the dilatation is more or less predominant according to the degree of impediment to the circulation, and the duration of life after the hypertrophous growth has ceased. When the latter has reached its utmost bounds, and existence has been prolonged, so that the dilatation is extreme, the heart attains to an enormous size, constituting the *cor bovinum* of the older writers. The pathological processes involved in the production of hypertrophy on the one hand, and on the other hand of dilatation, it will be observed, are quite different. In hypergenesis and hypernutrition the processes are vital, but distention and dilatation are processes purely mechanical. The former result from the exaggerated power of a vital function, viz., muscular contraction; the latter proceed from passive yielding of the tissues.

In this sketch of the production, successively, of hypertrophy and dilatation, it is assumed that the muscular structure of the heart is unchanged, and that morbid weakness of the organ does not exist. If the walls of the ventricles have undergone extensive fatty degeneration, for example, the rule of the succession of hypertrophy and dilatation may not hold good. A vital reaction sufficient to overcome the increased resistance is not called forth under the circumstances. The hypertrophous growth is slight or wanting. Yielding of the ventricular walls takes place speedily or at once, and dilatation thus occurs, with little or no hypertrophy. Weakness of the heart, induced from any cause, for example injudicious treatment by blood-letting and other debilitating measures, may cause an arrest of the hypertrophous growth before it has reached its intrinsic bounds, and in this way is hastened the epoch when the enlargement by dilatation commences. If the heart be greatly weakened by organic change, (fatty degeneration,) the ventricles may yield to the distention occasioned by the accumulation of the blood in the cavities, without any impediment to the circulation from valvular lesions or other obstacles except the diminished muscular power of the organ. Clinical experience furnishes examples of dilatation resulting exclusively from the latter cause.

And according to the foregoing statements, if, in connection with valvular lesions, dilatation be found after death to exist either without or with only a slight degree of hypertrophy, we should expect to find the muscular structure altered. In other words, in cases of enlargement of the heart proceeding from valvular lesions, if hypertrophy exist alone, or in a marked degree in connection with dilatation, we should expect to find the muscular structure normal, save as regards the morbid growth. Clinical experience verifies the correctness of these conclusions.

Of the two forms of enlargement of the heart, dilatation is the form to be dreaded. The production of hypertrophy, as has been seen, for a certain period compensates for an existing impediment to the circulation, and is a conservative provision. It is otherwise with dilatation. This is evidence that the ability to overcome an abnormal resistance no longer exists. The organ now begins to give way, and having once began to yield, the dilatation goes on progressively, with more or less rapidity, according to various circumstances, intrinsic and extrinsic. After a time the dilatation predominates over the hypertrophy. This is an important epoch in the progress of cardiac disease. From this period distressing symptomatic events referable to the cardiac disease are liable to occur, viz., dyspnœa, orthopnœa, and general dropsy. Prior to this epoch, although the hypertrophy and dilatation have existed and been gradually increasing for many months, or even years, the patient may not have experienced symptoms which led him to suspect cardiac trouble. It is at this epoch that frequently cases for the first time come under medical observation. The evils and danger connected with the disease arise mainly from the weakness and incompleteness of the heart's contractions. The cavities are constantly over-distended, and as the muscular power of the organ diminishes more and more, the over-accumulation of blood, and consequent dilatation, progressively increase. Death, not attributable to an incidental occurrence or an intercurrent affection, but due directly and exclusively to the cardiac disease, takes place in consequence of over-distention and a loss of muscular power amounting to paralysis. When death is in this way produced, it occurs after a prolonged period of intense suffering. Happily, (we may almost say,) a fatal result as thus produced, in a majority of cases, is anticipated by some one or more of various contingencies and accidental events, such as the formation of clots in the heart, œdema of the lungs, pleuritic effusion, apoplexy, etc. etc.

Regarding the evils and danger of dilatation, as well as the compensatory and conservative character of hypertrophy, and it is sufficiently obvious that the objects of treatment should be to maintain the former and postpone the latter. Hence it is clear that measures relating either to diet, exercise, or medication, which weaken the muscular power of the heart, must prove hurtful in proportion to their potency, since they conflict directly with the objects just stated. That the practice of treating patients affected with valvular lesions and enlargement by blood-letting, low diet, and extreme quietude, has been mischievous, is not less intelligible on rational grounds than evidenced by clinical experience. The objects of treatment which have been stated relate to any period in the progress of the disease anterior to the time when the dilatation predominates. When this time arrives, the recovery of predominating hypertrophy is impossible, and the object of treatment which remains, is to retard, as much as possible, the increase of dilatation, by measures which tend to support the muscular vigor which the heart still retains.

ART. III.—*A Case of Laceration of the Uterus.* By L. BEECHER TODD, M.D., of Lexington, Kentucky.

I WAS requested, on Thursday afternoon, March 4th, 1858, about two o'clock, to visit a married lady, forty years of age, who, as her husband informed me, was taken in her tenth labor about daylight. On entering her chamber, I found her stretched on a mattress before the fire, white, and cold as marble, almost pulseless, and apparently lifeless. "What does this mean?" I inquired of the midwife whom I found in attendance, at the same time administering hot stimulants, and ordering her to be placed very carefully on her bed, when I received the following graphic history of her case:—

"Her labor-pains awoke her about five o'clock this morning; pulse good; courage fair; temperature of skin excellent all morning. About ten o'clock her pains became not only more frequent, but more severe, and so continued until about noon, when, having discharged a large quantity of liquor amnii, she had several very severe pains, followed by a terrible bearing-down effort, when she screamed out that '*her child was turning over and over, and had gone up;*' immediately after which every pain ceased entirely, perfect exhaustion and languor ensued, and they thought best then to call a physician."

She had been in this condition for two hours, and did not appear to suffer much; but complained of pressure in her bowels and fullness about her womb; disposed to stupor, though frequently restless. A per-vaginam examination revealed the entire vaginal canal and uterus, as far as I could introduce my index and middle fingers, filled with a large quantity of coagulated blood, which I proceeded to remove as rapidly as possible. Failing, however, to touch the child—the hemorrhage still continuing—I ordered stimulants and cold applications over the uterine region; and wishing to go to a drug-store on the street, I met my friend Dr. Joseph S. Halstead, and requested him to visit the case with me. Her condition, pulse, sensation, and appearance, were about as when I first saw her. Upon a thorough vaginal examination and about the umbilical region, we both came immediately to the painful and terrible conclusion that the child was thrust into the cavity of the abdomen—the *womb was lacerated.*

Professor J. M. Bush and Dr. Bruce saw the case, who concurred in the distressing and fatal prognosis. We remained with her until six o'clock, alleviating, as far as possible, her sufferings, which seemed to increase, concluding that, in her present prostrated condition, no *operation* could be thought of.

About seven o'clock I returned with my friend Dr. E. L. Dudley. During this visit, with his assistance, I was enabled for the first time to effect a thorough examination of the extent of the laceration, position of child, and general condition of the parts. Introducing my entire hand into the uterus, and passing my index and middle fingers through the laceration, which seemed to involve the greater part of fundus, at least six or eight inches in length, I distinctly felt the child, which caused her intense pain, lying crosswise in the abdominal cavity, with the head in the left iliac fossa. It is needless to mention that all efforts to move or return the child proved in vain. Ordered perfect quiet, morphia, and hot applications. Saw her about midnight. Pulse scarcely perceptible; extremities cold; sinking gradually; morphia repeated.

Friday morning, five o'clock.—Found her, after a painful and restless night, rapidly sinking. She remained during the night perfectly conscious of her hopeless condition, which she bore with Christian fortitude, until about seven o'clock, when she expired.

An autopsy was made six hours after death, in the presence of Professors Bush and Skillman and Dr. Bruce. The abdominal cavity was found completely filled with coagulated blood. The child, a male, was unusually large, and thrust, with the placenta and membranes, crosswise in the abdominal cavity, the head lying in the left iliac fossa; the fundus of the uterus was lacerated to the extent of eight or ten inches, and the womb was somewhat contracted and filled with coagula.

Art. IV.—*A Case of Stomatitis Materna cured by the Syrup of the Phosphates.* By J. C. Reeve, M.D., of Dayton, Ohio.

I am desirous of laying before the profession a case in which a new remedy had a most happy effect upon a disease which is acknowledged to be always difficult of cure, and which sometimes sets all remedies at defiance.

The patient was a lady of rather delicate constitution, but who had generally enjoyed good health. She gave birth to her second child in March, 1855, being then about twenty-five years of age, and four or five months afterwards nursing sore-mouth made its appearance, with which she had not been troubled after her previous confinement. I was first called to prescribe for this complaint in January, 1856, and found her presenting all the distinctive features of this singular disease. I do not deem it necessary to enter minutely into the particulars of the case; the symptoms and appearances of nursing sore-mouth have been many times laid before the profession by those who have had more experience with it. I may refer, however, to the Report upon the disease, by Dr. McGugin, of Keokuk, Iowa, in the Transactions of the American Medical Association for 1858, as containing a description of the disease with which the case under consideration agreed in almost every particular. I especially remarked the burning pain along the course of the œsophagus and in the stomach after taking food, when the disease was worse than usual, and the constant aggravation of all the symptoms which followed the use of any of the subacid fruits. The report above mentioned contains an account of some cases far more severe than the one under my care, yet I may safely say that this one was severe enough to destroy almost every comfort of my patient's life for a period of nearly three years; and, as remedy after remedy was tried in vain, no slight amount of despondency was added to exert its depressing influence upon the health.

The ordinary remedies for the disease were prescribed as soon as I took charge of the case; but they proving of no benefit, weaning the child was recommended, with a feeling of confidence that it would put a speedy termination to the disease. In this, however, I was disappointed; it continued as bad as ever, and, without detailing particulars, I may say that almost every remedy I ever had seen prescribed or recommended for the disease was administered, without any permanent benefit. Singly, or in combination, I gave chlorate of potassa, syrup of iodide of iron, sulphate of iron with extract of gentian, iodide of potassium, tannin, gallic acid, quinine, decoction of bark with aromatics, subnitrate of bismuth with chalk and morphine, malt liquors, and lime-water. Locally I used the solid nitrate of silver to the ulcers, lotions of the same substance of various degrees of strength, lotions of tannin, and of glycerin with borax. Occasionally the disease would improve for a period under the use of some of these remedies, and for a few weeks be tolerably well, but only to break out again as bad as ever. Good effect was always produced by the use of chlorate of potassa, and of iodide of potassium in bitter infasions, while the use of bitter ale and lime-water always had a beneficial effect upon the general health.

In the autumn of 1858 the family removed to a prairie region of the Northwest, and I had encouraged my patient and her friends to look forward to a change of air and scene, and an entirely different mode of life, as likely to effect for her what medicines seemingly could not. But all parties again suffered a disappointment; and, being in correspondence with the family, I heard frequent complaints that the mouth was even worse than ever. Early in the spring of this year I saw an excellent recovery from scrofulous ophthalmia follow the use of the syrup of the phosphates, or chemical food, which had been dispensed by mistake for the tr. cinchonæ ferratæ; and it immediately occurred to me that it was worthy of a trial in a case where blood-making remedies are so clearly indicated as in nursing sore-mouth. I wrote to the friends, recommending a trial with it; before hearing from them Dr. McGugin's report fell into my hands, and the success he had obtained in one case with the hypophosphates encouraged me to give a similar preparation a trial. I therefore sent out a bottle of Blair & Wyeth's preparation. The patient commenced taking it in June last, at which time her mouth was as sore, if not worse than ever; she persevered with it for five weeks, at the end of which time her mouth was entirely well, which it had not been before since 1855, and her general health was so much improved that she says "she had forgotten what it is to feel in good health." She has taken the remedy occasionally since July, whenever she felt the need of a tonic, but has had no return of the sore-mouth. Her husband writes, under a late date: "For the first time in nearly four years she has eaten with impunity subacid fruits, etc. A month's trial with our wild plums gives no return of sore-mouth, while tomatoes are no longer tabooed. I think her in better health than she has been since the child's birth."

This case is reported, not with the idea that a specific has been found, but with the hope that an addition has been made to our means of controlling a disease which sometimes proves intractable. It is a single case, and as such is only valuable as encouraging to those who have cases upon which they have exhausted remedies and patience, to make one more trial. I may remark, however, that the many remedies prescribed, and the commendable perseverance of the patient in giving each not only a fair trial, but repeated ones, makes this case more than ordinarily valuable in establishing the fact of a cure by the medicine finally used.

ART. V.—*Proceedings of the Pathological Society of Philadelphia.*

WEDNESDAY EVENING, June 8th, 1859.

DR. HEWSON in the Chair.

DR. DARRACH exhibited a specimen of extensive post-mortem digestion of the stomach, which occurred in a case of tubercular meningitis.

Tubercle of the Meninges of the Brain and of the Kidney.—DR. HUTCHINSON said: The specimens which I present were removed from the body of a German, aged twenty-six, who died yesterday afternoon.

He was admitted into the Pennsylvania Hospital, on the 19th of March, for phthisis, which had not then advanced to the stage of softening. Shortly after his admission he complained of difficulty in passing his water. Upon examining the urine it was found to be albuminous, and to contain pus and blood-cells in great abundance. He also complained of pain upon pressure in the region of the kidneys.

He suffered much from severe headache, and from the first evinced a decided tendency to sleep. There was also pharyngitis, but I could see no ulceration.

The history of the case is rather imperfect. Two years ago he had been caught in a severe shower and thoroughly drenched. This circumstance had given rise to a severe cough, which had afterwards assumed a chronic form. He had had night-sweats, and had been losing flesh for some time previously.

His condition did not improve under the ordinary treatment for phthisis. The urine deposited pus and blood, even more copiously than at the time of his entrance into our wards. The pulse was very frequent. No diarrhœa occurred. Ten days ago there was a marked increase of the pain in his head, and delirium set in. During the delirium he was exceedingly restless, and uttered almost constantly short, quick cries of pain. Five days ago he became semi-comatose, and on Sunday complete coma supervened.

Death took place on Tuesday.

The autopsy was made fifteen hours after death. The head was first examined. There was found a slight congestion of the membranes of the brain, and an effusion of four ounces of serum in the ventricles. Tubercles of the size of a pin's head were deposited in the pia mater, especially on each side of the pons Varolii and in the fissure of Silvius. Upon opening the lateral ventricles the septum appeared to be incomplete. Miliary tubercles were scattered through the lungs in great abundance. A small cavity was detected at the top of the right lung.

The left kidney was somewhat larger than normal, and presented a "bosselated" appearance; its whole structure was destroyed and converted into a series of tuberculous abscesses—some of them sufficiently large to contain a walnut. These abscesses showed no tendency to communicate with the abdominal cavity. The right kidney was rather enlarged, and contained a few minute tubercles in its cortical substance. The left ureter was considerably dilated. The bladder was thickened, and had its mucous membrane slightly roughened. I could discover no tubercles either in the peritoneum or in the mesenteric glands. The right testicle had undergone tubercular degeneration.

In two other cases which have happened recently in the hospital, the left has been the kidney affected; and, in referring to M. Rayer's work, I find that out of sixteen cases, the disease has attacked both kidneys six, the left seven, and the right only three times.

In none of these cases did tubercular meningitis exist as a complication.

Fatty Kidneys in Typhus Fever.—DR. HUTCHINSON continued: I also present two other kidneys removed from a patient, who during life presented the symptoms of typhus fever, and after death some of the appearances of that disease. One kidney is found to be uncommonly enlarged, double the ordinary size; the other to have undergone complete degeneration. Under the microscope nothing but oil could be discovered. The urine was albuminous, and contained free oil.

The patient was under treatment only a few days. Nothing satisfactory could be learned in regard to her former history, but she seems to have been well two weeks previous to her admission here.

Considerable discussion followed the exhibition of both these specimens.

DR. PACKARD had noticed tubercle corpuscles and some fibrous tissue and spindle-shaped cells in the tubercular kidney. The fibrous tissue and the cells were in the walls of the abscesses.

DR. WOODWARD subsequently reported more particularly on the structure of the walls, and stated that they were mainly composed of unsoftened tubercular matter. The spindle-shaped cells he believed to belong to the lining of the tubuli uriniferi.

Partial Fractures of the Ulna.—Presented by DR. LENOX HODGE.

Frederick Trump, aged fifteen, while at work in a machine-shop, had his left arm caught by the band, and was twice carried around the shaft. His arm was torn completely off, about three inches below the shoulder-joint; the skin and tissues around the shoulder were much lacerated.

Amputation was performed by Dr. Norris through the joint; and the patient recovered without a bad symptom.

Upon examining the arm we found that there were, besides the fracture of the humerus, a fracture of the radius, and two partial fractures of the ulna.

The ulna, with its partial fractures, I exhibit to you to-night. The upper is situated at the juncture of the upper and middle third; the lower is in the middle of the lower third of the bone. They both involve the periosteum on the anterior surface, pass obliquely and for a short distance longitudinally upward; the fibres that remain unbroken are bent, so that the whole bone is curved forward. In this specimen there is no *angular* deformity, and when covered by muscles, fasciæ, and skin, would furnish, not the symptoms of partial fracture, as usually given, but of bent bones. "Pain and loss of power in the limb, its preternatural curve, which could be increased or diminished optionally, and the disposition in the bones when straightened to return to their flexed position, unattended by crepitus, or that circumscribed projection which a displaced fragment of bone would produce."* So that in a case like this there would be nothing left to guide us, in forming a diagnosis, but the age of the patient. Indeed, the accident might occur, if the blow or fall were sudden and severe, even in children under two years, and then the partial fracture could not be distinguished from the bent bone. It may be that this has really happened in some instances where the injury was regarded as a bent bone. And since some fibres of the bone must have given way if the curve is reproduced when the force that straightened it is removed, it would perhaps be more accurate and simple to classify, as Dr. Hamilton does,† bent bones as a mere division of incomplete fractures.

Within a few weeks several cases of incomplete fractures have been brought to the Pennsylvania Hospital. One was that of a clavicle of a boy, eight years of age; the curve was forward and downward; was unattended by crepitus or angular deformity. The boy had fallen down several steps, and had at the same time fractured his humerus. The deformity of the clavicle could be but partially removed. Another was that of the forearm of a boy of fifteen years of age, who had fallen down five weeks after a fracture, which he describes as "having gone clean through." The arm was perfectly straight, he says, until he fell. When brought to the hospital, both bones were *curved* very much backward. The middle of this curve was about an inch and a half above the wrist. The bones could be straightened, but a part of the deformity had a tendency to return. The present incomplete fracture occupies about the same position as the previous complete fracture. There was but little callus present; so little, indeed, that a previous fracture would not probably have been suspected. This case is mentioned as being analogous to, though perhaps not strictly identical with, an incomplete fracture of *bone*.

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* Remarks on certain Injuries of the Bones in Children. By John Rhea Barton, M.D. American Med. Recorder, Jan., 1821, p. 11.

† Report on Deformities after Fractures. By Frank Hastings Hamilton. Transactions American Med. Association, 1855, p. 421.

This morning, a boy, sixteen years of age was brought to the hospital, with many severe injuries, received by being carried twice around a shaft in a steam marble works. His left forearm is curved forward, on the radial side, gradually throughout its whole length, and bent forward, on the ulnar side, angularly, at about two inches above the wrist. There is no crepitus perceptible, neither in the radius nor ulna. The ulna, indeed, presents the signs of a partial fracture, while the radius exhibits those usually attributed to a bent bone. But owing to the age, and the specimen exhibited to you, I am led to consider them both as partial fractures.

To these I would add another injury, caused by a cart-wheel passing over the forearm, in which the radius was broken, and the ulna presented all the signs of an incomplete fracture. The ulna was bent strongly toward the radial side, but could be straightened. There was a marked tendency toward reproduction of the deformity when the counteracting force was removed. No crepitus could be elicited; there was no increase of mobility except to and from the radial side. There was an angular projection in the upper third of the bone. The man is twenty-six years of age, and apparently healthy and well developed. I have not found a similar case recorded as occurring in an adult; and even Dr. Barton says:* "That a partial fracture cannot occur in a healthy adult, is very possible." Yet there seems to be no good reason why it *may* not occur. The rapidity and force with which the blow is given, the extent of surface to which it is applied, might, it would seem, be so varied as to sever all the fibres or only a portion of almost any given substance. And there are instances recorded† even of old persons (where the earthy constituents preponderate still more) having had partial fractures of the neck of the femur. In the above-mentioned case, notwithstanding all our efforts, there is still now (at the end of five weeks) a perceptible bend toward the radius.

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* Amer. Med. Recorder, Jan., 1821, p. 14.

† Guy's Hospital Reports, second series, vol. ii. p. 347. American Jour. of Med. Science, April, 1857, p. 306. Fractures of Neck of Thigh-Bone, by R. D. Mussey, M.D. Or, as quoted by Dr. Packard in the American edition of Malgaigne's Treatise on Fractures, Philadelphia, 1859, p. 552. In the case recorded by Dr. Mussey, the patient was only forty-two years of age.

The exhibition of this specimen led to some remarks by Drs. Hewson, Packard, and Hall, on the diagnosis between partial fracture and bent bone.

Severance of Cervix Uteri during Labor.—DR. KELLER said: It will be remembered that at a former meeting of the Society, (see page 17 of its Proceedings,) I presented a specimen of a torn-off neck of the uterus. I wish, to-night, to add some additional particulars of the case, and especially to record the fact that the patient has since been delivered of a healthy child, without difficulty.

Mrs. P., twenty-eight years of age, from Bohemia, after having suffered for almost two months from violent spasms of the womb, reached the normal term of her pregnancy. Having been sent for on the 19th of September, 1857, at seven o'clock P.M., I found the vaginal portion of the cervix uteri opened for about an inch and a half, and presenting forward and upward, and rigid, and about an inch long. I prescribed unguent, belladonnæ, and endeavored at every pain to draw down the uterus, in order to bring it into the right axis. Being greatly fatigued I left the patient, leaving word to send for me as soon as any difficulty should arise.

Next morning I was called for, and heard that she had been delivered, at two A.M., of a dead boy, and that at the sexual parts a particular tumor had formed. On examination I found the whole vaginal portion of the cervix uteri torn off, and only suspended by a pedicle protruding from the vagina. Upon consultation it was decided to lay a ligature round that part of it which was undetached, and then to cut it off. This was done without causing the slightest bad symptom.

The patient did not even get the milk-fever, and felt so well, that after a few days, she left the bed, in spite of my remonstrances; in consequence of this, a hemorrhage took place several times, which, however, soon stopped. The ligature came away after four weeks.

At the beginning of April, 1858, Mrs. P. was suffering from anæmia, and I was obliged to remove a bleeding wart from her breast by ligature. About this time she became pregnant again, and was tolerably well until about the end of December, when she was again attacked with spasmodic pains of the womb. On examination I found the inner os uteri closed.

On the 3d of January, 1859, early in the morning, she had natural labor pains, and when I examined her, at one P.M., I found the inner os uteri —around the rim of which I could carry my finger—opened. The waters burst at two A.M. She was soon after delivered of a full-grown female child. The after-pains, which were very severe, were increased by her carelessness, in consequence of which she was for eight days suffering most terribly in head, limbs, and body, so severely that she had even to send for me at night time. Yet she recovered very fast, and she and her child were, when I saw her last, (May 30th, 1859,) in a perfect state of health.

WEDNESDAY EVENING, June 22d, 1859.

Vice-President DR. STILLÉ, in the Chair.

DR. HALL exhibited a femur, with partial fracture through the great trochanter and without the capsule, taken from the body of an adult.

DR. PACKARD presented a preparation of a larynx and trachea, completely invested with a smooth and delicately formed false membrane.

Scirrhus of the Rectum.—DR. LIVEZEY read the following:—

L. J., aged fifty-three, had always enjoyed good health up to his last illness, except that he complained of some irritability of the stomach, which he attributed to dyspepsia. In December last, he was attacked with pain in the lower part of the pelvis, along the course of the ureters, accompanied by pain upon pressure over the region of the kidney. He suffered at the same time from retention of urine. He was treated by a practitioner in the country by means of diuretics, and other articles, for what was supposed to be spasmodic stricture of the neck of the bladder, with an irritable or inflamed condition of that organ. The catheter was frequently used to draw off the urine. The bowels were costive; injections being required to procure a stool. In this way he remained for several months, sometimes improving, so that he could pass his urine without difficulty; at other times suffering from a relapse, when the same symptoms were presented in an aggravated form.

I saw the patient in April; he then complained very much of the irritable condition of his stomach; and about this time he had a slight hemorrhage from the urethra. Early in May he came to the city and seemed much better, although some slight œdema of the face and feet had occurred. The urine presented a straw-colored appearance, was found to be highly albuminous, with a sp. gr. of 1009; but presented nothing abnormal under the microscope. At this time a physician was called in consultation, and pronounced the case, upon careful examination by the rectum, one of cancer of the prostate gland. A few days later the patient had a return of profuse hemorrhage from the urethra. The irritable condition of stomach was increased and persistent, almost every thing being rejected, at one time even stercoraceous matter was vomited. The patient gradually became weaker until he was unable to leave his bed; the hemorrhage from the urethra recurred, and he complained of pain in and around the pelvis and lower extremities. To use his own expression, he felt as though his joints were being torn asunder. He died on the 2d instant.

Autopsy, forty-eight hours after death.—Rigor well marked.—Discoloration over the lower part of abdomen; body much emaciated; no abdominal effusion; intestines congested externally; no softening or mammillation of the mucous membrane; and no thickening or rigidity of pyloric extremity of stomach; the mesenteric glands were free from disease; the bladder was empty and contracted, its muscular coat was hypertrophied, its mucous membrane slate colored, and exhibiting signs of chronic inflammation; the prostate was enlarged about one-fourth its natural size; its internal structure was of a pale, yellowish bacony appearance. Vesiculæ seminales were healthy; the meatus was dilated. The kidneys were enlarged and quite flabby, the left one congested, but not pale or waxy looking. The pelves of the kidneys were very much distended. The rectum, about two inches above the anus, was involved in a body of cartilaginous thickening, which cut with an evident jarring to the knife. The diseased portion encircled about two-thirds of the circumference of the intestine, and extended upward about four inches; it was firmly connected with the posterior wall of the bladder, but did not appear to penetrate deeply into its structure. Under the microscope the prostate presented amorphous masses of colloid. This was tested for starch, but none was found; the cells were paler than natural. The nodular mass presented bands of fibrous tissue; but owing to the length of time that elapsed before the examination was made, it was impossible to speak definitely as to the nature of the cells. The pain in the lumbar region and the uniform diffusion of the blood through the urine, made it probable that the hemorrhage came for the most part from the kidney, at the same time that the occasional occurrence of clots in the urine, and the pain on pressure over the bladder, together with the post-mortem appearance of changes of structure in that organ, would seem to show that some at least of the blood was derived from the bladder.

Strangulation of the Intestine.—DR. F. G. SMITH presented, through DR. STILLÉ, the following account of a case of strangulation, with a drawing illustrative of the lesion:—

On the 19th of April, 18—, I was called to see Mr. A. W. D., who was said to be affected with a sudden attack of bilious colic, and found him suffering from constipation, nausea, restlessness, and great pain in the bowels, of a spasmodic character, but without abdominal tenderness on pressure. The usual anodynes and aperients were at once employed, but without any decided alleviation of the symptoms.

On the 20th, the nausea, griping, and restlessness had increased in violence, and distressing hiccough, with tenderness on pressure in the right iliac region, had supervened. The symptoms of local inflammatory action led to a resort to venesection, with no apparent effect, however, but that of a temporary abatement of the spasmodic pain. A few hours afterwards the pulse had become very feeble, and rated 120 beats to the minute; the singultus continued, the tenderness on pressure was increasing, and the bowels were still unmoved. Under these circumstances, a consultation with Prof. Jackson was requested, and further depletion, this time by leeches over the seat of pain, was determined on, together with the rapid administration of mercurials, with a view to their constitutional effect.

In the evening, but little improvement was observed, except in a slight lessening of the local tenderness. Early the next morning, I found him sitting on the close stool, to which he had resorted, in a vain attempt at an evacuation of his bowels. He was then pulseless, and notwithstanding immediate and most active stimulation, both externally and internally, his death followed within half an hour after he had risen from his bed. It may be stated that on the day of his attack, he had eaten rather heartily of stewed cherries; this had created some uneasiness in his bowels, on account of which he had gone to stool, and while straining was suddenly seized with a sharp pain. Domestic remedies were used for the removal of this pain, throughout the night, without effect.

Autopsy twenty-six hours after death. Present, Drs. Jackson and J. Neill.

In the cavity of the abdomen the small intestines were found to be distended with flatus, and injected, but not inflamed. Having been traced in the direction of the ilio-cæcal valve, about twelve inches of the intestine were ascertained to be completely strangulated.

The strangulation was produced in this manner: Near the termination of the ileum there was an attempt to form a supplementary cæcum, which resulted in a blind pouch communicating at a right angle with the ileum; from this abnormal pouch to the true cæcum there extended a fold of mesentery, under which a portion of the ileum had insinuated itself. During the efforts at stool, this portion of ileum probably ruptured the extended membrane, and was carried twice through the opening by the peristaltic action of the bowels. As the gut had a disposition to straighten itself, the band of membrane was twice carried around the intestine, thus most effectually strangulating it. The mode of strangulation may be demonstrated by tearing a slit, about three and a half inches long, near the edge of a piece of muslin, and then through the opening passing twice a piece of tape, doubled upon itself so as to represent a knuckle of intestine. It will be found, upon pulling on the two extremities of the tape so as to render it tight, that the edge of the muslin will embrace the tape instead of occupying its first position, thus clearly showing the manner in which the intestine was strangulated in this unfortunate gentleman's case. The strangulated portion was highly injected, but not inflamed.

The case is presented to the Society as an item of experience in a class of cases always interesting, notwithstanding their almost invariable fatality.

The Society then adjourned until September.

WEDNESDAY EVENING, September 14th, 1859.

The President, DR. LA ROCHE, in the Chair.

Expectoration of Bronchial Casts.—DR. GROSS exhibited a complete cast of a bronchial tube, with its ramifications, expectorated by a patient of Dr. James E. Reeves, of Virginia, and read Dr. Reeves's history of the case:—

Mr. J. P. T., aged thirty-five, height five feet ten inches, average weight one hundred and fifty pounds—in early life and for nine years a teamster, subsequently a dry-goods dealer—suffered a severe attack of enteric fever in the year 1853, and for twelve years, ending in 1856, was an immoderate whisky drinker. From this time he began a more temperate life, from compulsion; for during the last two years of his debauchery his health had markedly failed. He had not, as far as he could recollect, suffered from acute bronchitis.

February 23d, 1858, he requested my opinion respecting certain symptoms under which he labored, which had harassed him, with little variation, for more than a twelvemonth. These were, wandering pains in the chest and right hypochondrium; shortness of breath; frequent disposition to clear the throat, with slight huskiness of the voice; palpitations of the heart; heat and dryness of the skin; occasional flushing of the cheeks; costiveness of the bowels, and impairment of the strength and appetite.

Auscultation revealed no morbid sounds, except at the lower part of the lungs.

I advised thorough pustulation of the chest, and alteratives, under which treatment improvement seemed to follow. But on the 15th of March the patient went on military parade, the fatigue of which caused a return of his uneasy sensations, and from this date cough became more urgent. On the following day, while on the street and suffering a fit of cough, he brought up, without premonition, about two ounces of bright blood. The next day, about the same hour and at the same place, hæmoptysis recurred; eight ounces were lost. From this time up to 10th of April—when the last and most alarming hemorrhage occurred, and with it the expulsion of the casts—he continued, at intervals of from three to six days, to bring up blood in gushes; the smallest quantity brought up at any one time was two ounces; the largest, thirty; the aggregate amount lost being not less than one gallon and a half. After the second hemorrhage the blood was less florid, and frequently mixed with black coagula. As above remarked, with the expulsion of the casts the hemorrhage ceased, save an occasional bloody sputa; and from that time the patient began to improve. At present he is in the enjoyment of good health, having very much increased in flesh.

For the arrest of the hemorrhage, lead, alum, dilute sulphuric acid, gallic acid, and other astringents were used, but were of little benefit. After-treatment: Chest kept sore with tartar emetic ointment; frictions to the entire surface, night and morning, with a salt towel; small doses of morphia; cod-liver oil; syr. of iodide of iron; and milk-punch.

DR. GROSS referred to a similar case described by John Hunter.

The specimen was referred, for microscopic examination, to a committee.

Bi-Monthly Abstracts;

OR, BI-MONTHLY NOVELTIES IN MEDICAL, PATHOLOGICAL, SURGICAL, OBSTETRICAL, PHYSIOLOGICAL, AND CHEMICAL SCIENCE.

SURGERY.

BY SAMUEL W. GROSS, M.D.

I.—*Aneurism of the Ischiatic Artery; ligature of this vessel, and subsequently of the Primitive Iliac Artery,* with *remarks* By L. A. Dugas, M.D., Professor of Surgery in the Medical College of Georgia. (Southern Medical and Surgical Journal, October, 1859, p. 651.)

Aneurism of the ischiatic artery is an occurrence of such great rarity, and presents so much obscurity of diagnosis, as to render the case of Dr. Dugas one of great interest, especially as the ischiatic artery was ligated for its cure—an operation seldom resorted to in the living subject.

The patient, a male, twenty-four years of age, and enjoying good health, when four years old fell upon his nates; and five years subsequently perceived a small tumor near the tuberosity of the ischium, which has gradually increased and pulsated for several years. When he consulted Dr. Dugas in March, 1857, the tumor was about the size of a goose's egg, and was situated upon the inner cheek of the nates, extending in the direction of the ischiatic artery. It could be emptied by pressure; pulsated strongly; was the seat of the aneurismal bruit and thrill along the course of the ischiatic artery; and pressure upon the artery at the sciatic notch arrested both the thrill and pulsation, which returned when the pressure was removed.

The ischiatic artery was exposed by an incision, five inches in length, being made in the middle of a line extending from the tuberosity of the ischium to the posterior superior spinous process of the ilium. The ligation of the vessel put an immediate stop to the pulsations of the tumor, and the wound was united with quill sutures.

The case progressed favorably until the morning of the ninth day, when, while the patient was at stool, secondary hemorrhage suddenly came on, which was controlled by pressure. After the lapse of forty-eight hours, on account of the oozing of blood from the wound, the dressings were removed, when the blood gushed out, necessitating the opening of the wound, a procedure which showed that the blood issued a little above the ligature. The hemorrhage was arrested by plugging with lint, and the patient was much exhausted from the loss of blood. A consultation having been held, it was determined to ligate the common iliac, and Dr. W. J. Holt performed the operation. On account of the patient vomiting several times during the procedure, the peritoneum was wounded. The patient died in about fifty-eight hours, not having fairly rallied from the loss of blood. An autopsy was not made.

II.—*On Section of the Supra-Orbital Nerve in Spasms of the Eyelids.* By PROFESSOR VON GRAFE. (Archiv für Ophthalmologie, IV. 2.)

In this paper the author divides the cases of blepharospasm, in which the section of the supra-orbital nerve is indicated, into the following five classes:—

1. Cases in which persistent and excessive spasms of the orbicularis muscle are caused by the presence of a foreign body between the lids and the ball of the eye. Dr. V. Gräfe operated on two patients thus affected, with complete success.

2. Cases where a periodically returning blepharospasm developed itself in consequence of an obstinate neuralgia of the supra-orbital nerve, resisting all modes of treatment. In one instance the operation was perfectly successful, but was followed by disagreeable itching within the limits of the anæsthetic region, which, however, disappeared at the expiration of eight weeks.

3. Blepharospasms which were primarily symptomatic of a keratitis, but which persisted after the affection of the cornea was cured. Twelve persons, eight being children, were operated upon, and, with one exception, the cures were satisfactory. In those cases where it was possible to learn in which of the two eyes the spasms had originated, the nerve of the affected side was alone divided; and in most instances the muscular contractions ceased first on the operated side, and always in the upper lid sooner than the lower. If it was impossible to discover exactly where the spasm had commenced, the operation was performed on the side where the inflammation of the cornea was most severe. In a case of this description, the section of the nerve did not remedy the spasms of the orbicular muscle of the opposite side, so that the operation had to be repeated.

Dr. V. Gräfe acknowledges that cases in which it is necessary to have recourse to this means are extremely rare; the twelve in which he was obliged to operate occurring in eight thousand cases of ophthalmia, which were almost invariably accompanied by blepharospasm. He recommends for the treatment of these cases, among other remedies, immersions of the face in cold water, which cure patients in whom the spasm has existed for several months.

4. Cases where the spasm of the lids accompanies keratitis, and becomes so violent that it interferes with the treatment, and might consequently occasion loss of the eye. In three children thus affected, the operation arrested the symptom in one, and relieved it very considerably in the other two.

5. Cases in which the blepharospasm is an element of an inveterate affection of the supra-orbital nerve. The author obtained but temporary success in six patients suffering from this complication.

III.—*New Treatment of Hydrocele.* By JAMES YOUNG, M.D., Surgeon, Edinburgh. (Medical Times and Gazette, July 30th, 1859.)

The author reports several cases of hydrocele cured by the iron-wire seton, and seems to have great confidence in this mode of treatment, which was first suggested by Professor Simpson. His reasons for considering it an improvement upon the silk seton, and injections of irritating solutions, are, that it produces less pain, and effects a more speedy cure. Our own experience, which accords with that of Dr. Gillespie, as reported in a recent number of the above periodical, is, that metallic setons are either unsuccessful, or prolong the treatment, and that they compare very unfavorably with the ordinary seton.

IV.—*On Bloody Tumors of the Pavilion of the Ear, in the Insane.* By M. ACHILLE FOVILLE. (Gazette Hebdomadaire, Nos. 29 and 30, pp. 450 and 469, 1859.)

The pathology of this affection, which occurs exclusively in the insane, and especially in those affected with paralysis, is surrounded with obscurity, notwithstanding the researches of MM. Foville, Ferrus, Motet and others, who have recently published accounts of their researches in the above journal. The paper of M. Foville is very elaborate, and we have only space to extract his summary, which embodies all the practical points known on the subject:—

1. Bloody tumors of the pavilion of the ear, observed in the insane, are formed by the effusion of blood beneath the perichondrium, which is detached from the cartilage.

2. The detached perichondrium retracts upon itself in proportion as the effused blood is absorbed, and drawing with it other portions of the pavilion, thus accounts for the deformity consequent upon this class of tumors.

3. The perichondrium deposits, on its internal surface, a cartilage of new formation, which produces at one time a layer, united to its whole extent, at other times independent depots more or less separated from each other. These new products are the cause of the thickening of the ears, which have been the seat of these effusions.

4. The formation of sanguineous tumors of the ear is very frequently preceded and accompanied by general disturbance of the cephalic circulation; and it is worthy of remark that the increase of discoloration, heat, and pain, which is observed in these affections, resembles in a striking manner those symptoms seen in animals in which the sympathetic nerve has been divided in the neck, or from which the superior cervical ganglion has been removed. Although it is impossible to draw any definite conclusions from this coincidence, yet new researches in this direction may throw some light upon the etiology of congestions and hemorrhages of different parts of the head.

V.—*Report on Amputation of the Penis for Epithelial Cancer.* (Medical Times and Gazette, October 1st, 1859, p. 334.)

One of the most interesting features of the valuable periodical in which we find this report is, that from time to time it presents a collection of cases from hospital practice, on a surgical or medical topic, from which important deductions are drawn. In the report on epithelial cancer of the penis are presented short histories of thirty-five cases of this affection, operated upon in a period of more than four years. The value of these statistical reports would be much enhanced were it possible to trace the result of the cases after their discharge from the hospital. In a few instances only can this be accomplished, and hence it cannot be stated how long the patient survives, or whether the disease returns in any other portion of the body. The comments upon these cases are extracted in full:—

Fatality of the operation.—Amputation of the penis is not, under ordinary circumstances, an operation attended by any material risk to life. Of the thirty-five cases, all excepting two resulted in recovery; and in one of the latter the fatal event was in no way connected with the operation, and did not occur until three months after it. In the only one in which death *bona fide* resulted from the operation, it was caused by a low form of pneumonia which supervened in the fourth week. The patient had previously been a healthy man. Such results will, of course, occasionally follow all operations, even the most trivial, especially when performed in the wards of the hospital, where erysipelas, pyæmia, etc. are often rife. The risk attending amputation of the penis is probably increased slightly in proportion as the advanced stage of the disease requires that it be performed low down. When, as we have seen in one or two instances, it is required to dissect away the crura of the organ from their attachment to the bone, the danger attending it may even become considerable. In none of the cases of our present series, however, was so extensive a dissection required, and a majority of them were amputations not much below the glans.

Age most liable to cancer of the penis.—The age of the patient is stated in only twenty-three out of our cases. The oldest in the series was 77, the youngest 27. To classify them according to age, we find one under 30; four between 30 and 40; eight between 40 and 50; four between 50 and 60; five between 60 and 70; and one between 70 and 80. Thus it would appear that middle age is the period of life most liable to this form of cancer, a circumstance to which, probably, several influences contribute.

Exciting causes of cancer of the penis.—It has long been a matter of observation among surgeons, that congenital phymosis often acts as a localizing or exciting cause of cancer of the glans. The disease is exceedingly rare in Jews. In only four of the cases of our series do the notes state that this condition of the prepuce had existed; but it must be borne in mind that no special attention was given to the reporting of the previous history of the case by those who have supplied to us the data we have used. The object alone in view was the result of the operation. Thus it is highly probable that a far larger proportion were really the subjects of phymosis. In one case it is stated that a long-standing venereal sore had preceded the malignant one, and in another, the cancerous ulceration attacked a cicatrice left by a wound in infancy.

VI.—*On Buccal Cancer in Smokers.* By M. BOUISSON. (Montpellier Médical, June and July, 1859; Gazette Hebdomadaire, 1859, No. 32, p. 506.)

The learned professor of Montpellier has recently, in an elaborate article, evinced much zeal and talent in defending the old and should-be exploded idea, that cancer and cancroid affections of the lip are produced by the irritant action of tobacco incessantly concentrated upon the same point of the mucous membrane. In support of his belief he adduces sixty-eight cases of cancroid or cancer of the lips, occurring in patients who smoked to excess. He states that these affections have become much more common since the habit of smoking has become so general, and that, before the increased consumption of tobacco, they were but little known on this portion of the body. Although M. Bouisson grants that cancer of the lip may arise from other causes than smoking, yet he maintains that if a person be predisposed to this affection the use of tobacco will provoke its appearance, when it might have never shown itself under other circumstances. The short clay pipe and bad tobacco used by the poor, will develop the disease sooner than the fine cigar smoked by those who can afford it. Those who believe in this doctrine should take heed of this point.

VII.—*On the Treatment of Spina Bifida by Injections of Iodine.* By DANIEL BRAINARD, M.D., Professor of Surgery in the Rush Medical College. (Chicago Medical Journal, September, 1859, p. 517.)

In this essay Dr. Brainard, after discussing the seat and pathology of hydrorachitis, considers the different modes of treatment instituted for its relief, and gives the results of fifty-nine cases treated by puncture, excision, ligature, and pressure. From his table, we find that of 35 cases in which punctures had been made, 17 resulted in cures, 16 in death, 1 was palliated, and the result of 1 was unknown: 11 cases were subjected to excision, with 7 cures, 3 deaths, the result of 1 being unknown. Ligation was instituted in 8 instances, 5 being cured, and 3 terminating fatally. In 5 cases, pressure gave the result of 3 cures, 1 death, and 1 palliation.

The treatment of spina bifida by injections of iodine was first instituted by the author, and he illustrates his paper by ten cases treated in this manner, five occurring in his own practice, two in that of Dr. Crawford; Chassaignac, Velpeau, and Nélaton, having each had one case. The oldest patient was thirteen, the youngest a new-born child, and in four there also existed chronic hydrocephalus.

Of the ten cases thus treated, five were cured, three died, and in two the results are uncertain, having occurred in the practice of MM. Nélaton and Velpeau. It is proper to state, however, that in one of the fatal cases hydrocephalus coexisted, and was the probable cause of this termination, as the spinal canal was found closed, and there was no irritation about the tumor to account for death. In another fatal case the spina bifida was cured, and the child died seven months afterwards from hydrocephalus. The result cannot, therefore, be attributed to the injections of iodine.

Dr. Brainard deems interference improper when the tumor is small, and the patient is somewhat advanced in years and in good health. Also in children affected with acute disease, especially of the brain and spinal cord.

The rules adopted by the author in making these injections are as follows:—

1. Make the puncture in the sound skin at the side of the tumor.
2. Inject the solution of iodine and iodide of potassium, commencing with one-fourth of a grain of the former to three-fourths of a grain of the latter, and retain it by slight pressure.
3. Evacuate no more of the liquid than the quantity of injection about to be thrown in.
4. If convulsions supervene, the fluid may be drawn out and its place filled with distilled water.

5. Lay the patient on the face, and if there be heat apply evaporating lotions to the tumor and to the head.

6. When the tumor becomes flaccid, apply collodion or other means of contracting the skin. This should be continued for some months after the swelling has disappeared.

7. After the effect of an injection is past, repeat it as many times as may be necessary, and gradually increase the strength according to the effect produced.

VIII.—*On Local Sweating of the Eyelids.* By PROFESSOR VON GRAFE. (Gräfe's Archiv, Band iv. p. 254.)

The author has observed this occurrence in four instances to an excessive extent, and in several others in a less degree. Patients thus affected appear, on superficial examination, to be the subjects of an ordinary conjunctivitis with excoriation of the lids; but the disproportion between the slight irritation of the conjunctiva and the great amount of secretion on the surface of the lid is at once obvious. The external surface of the lids, and especially of the upper one, is somewhat discolored and covered with a layer of fluid, the moisture being confined within the limit of the orbital ridge.

In Dr. Gräfe's first case, immediately after drying the lid, another thin layer of fluid was reproduced, so that even with the greatest care the skin could be kept dry only for a few minutes. The fluid, at first, was transparent, but gradually became turbid; and an examination with a lens showed that it issued from many minute, punctiform apertures in the skin, and finally collected in drops.

The conjunctivitis in these cases is only secondary, arising from the sweat flowing from the upper lids into the angles of the eyes. In two of the cases the affection was connected with general ephidrosis, and was increased by much exercise. It is an exceedingly obstinate disease, and is liable to be mistaken for conjunctivitis. Local applications of lead, nitrate of silver, and other articles, temporarily heal up the excoriations, but exert no influence on the secretion. In one case, smearing the lids with pitch was found to be beneficial. Cold baths, friction, and other means which induce activity of the skin, are important adjuvants in the treatment.

PHYSIOLOGY.

BY S. WEIR MITCHELL, M.D.,

LECTURER ON PHYSIOLOGY IN THE PHILA. MED. ASSOCIATION.

I.—*On the Natural Constants of the Healthy Urine of Man.* By the REV. S. HAUGHTON, F.R.S., Fellow of Trinity College, Dublin.

The author of this paper starts with the idea of Bernouilli, that the total quantity of work of which a healthy man is capable is constant, no matter in what description of labor he may engage. After partially admitting the justice of this statement, he gives the following propositions as offering a more correct view of the subject:—

1. A man in health consumes, per day, a certain amount of food and drink, and excretes, per day, an equal amount of waste matter, supposing him to be full grown, in good health, and not gaining or losing flesh.

2. The excretions are more highly oxidated than the food or drink consumed.

3. The difference of oxidation of the *ingesta and excreta*, converted into work, should account for, and be equal to, the amount of total labor effected per diem.

4. The work done by the body per day is—first, that expended on the organic functions; second, in sustaining the animal heat; third, the mechanical work, or bodily labor; fourth, the unknown, and hitherto unmeasured, mental labor.

The author then classifies the excretions, and proceeds to examine that of the urine with reference to mechanical labor and mental activity. He thus examines:—

1. The daily healthy discharge of urea.
2. That of uric acid.
3. That of phosphoric acid.
4. He compares the foregoing with the daily work, mental and physical, and the amount of food taken daily by the persons examined.

As to urea, he obtained the following results in six well-fed, flesh-eating, wine-drinking men:—

	Urea, per day. grains.	Urine, per day. ounces.	Sp. gr.	Urea, per fl. oz. grains.	Solids, per day. grains.
Mean......	575·87	47·3	1021·7	12·18	1013·49

This agrees with Lehman and Bischoff's estimate of their own excreta. The next table gives the results of a like examination of urea in vegetarians, all of whom, however, included eggs and milk, or both, in their vegetarian diet list:—

	Urea, per day. grains.	Urine, per day. ounces.	Sp. gr.	Urea, per fl. oz. grains.	Solids, per day. grains.
Mean......	393·99	59	1014·71	6·76	890·99

Mr. Haughton found, in the next place, that beef eaters excreted 4·55 grains of uric acid daily, and vegetarians 1·48 grains. Phosphoric acid gave the following results: For beef eaters, 37·07 grains; for vegetarians, 26·70 grains daily.

The author concludes this portion of his paper with an argument against the view which he supposes to be generally held, that the waste of nervous matter is the exclusive source of phosphoric acid. In the concluding section of his paper Mr. Haughton will apply the facts here stated to the elucidation of the problems set forth in the beginning of this analysis of his direct results.—(*Dublin Quarterly Journ. of Med. Science*, No. lv. 1859.)

II.—*On some Actions performed by Voluntary Muscles, which, by habit, become Involuntary.* By J. OSBORNE, M.D., King's Professor of Materia Medica.

This paper contains some curious observations, which, though of no great value, admit of being applied to explain certain peculiarities of diseased conditions:—

Habits during sleep.—In four boarding-schools of boys and girls, mostly under fourteen years of age, the number of those who slept on the right side was 248; on the left side, 260; and on the back, 234. In two other establishments, containing young persons of both sexes, but above the age of childhood, 23 slept on the left side, 58 on the right side, and 29 on the back. In a barrack, inspection of the sleepers during three nights gave the following results: On the left, 22; on the right, 44; on the back, 62.

If these returns be correct, they show with increasing years an increasing tendency to sleep on the right side. On comparing this with Pelletan's report of the frequency of pneumonia on the right side, we find the cases of right pneumonia to left pneumonia as 2½ to 1; and in Andral's table the same, or nearly the same statement is found. This conformity between the position generally assumed in sleep and the prevalence of inflammation in the right lung, seems to the author to justify him in connecting them together, as, *to some extent*, cause and effect.

The author adds, that we lie on the right side to relieve the viscera of the weight of the liver and to allow the heart greater freedom. He also states, that this preference of the right side in sleeping is not confined to man.

The remainder of the essay treats of the bent position in sleep, of snoring, of waking habits, of crying, as a relief in suffering. Among other points, the author has gone so far as to estimate the number of winks performed during given periods, and states that the eyelids are closed, on an average, four hundred and twenty-four times in an hour; but, as we might suppose, far less frequently when the attention is fixed on some object of interest.—(*Dublin Quarterly Journ. of Med. Science*, No. lv. 1859.)

III.—*Observations on the Action of Pancreatic Juice on Albumen.* By WM. BRINTON, M.D.

In the last number of this journal we gave in full Dr. Corvisart's defence of his views in regard to the action of the pancreatic juice and pancreatic infusions upon albumen. Dr. Brinton, who has lately examined so much of the subject as relates to the effect of artificial infusions of pancreas in dissolving albumen, has reached the conclusion that these infusions owe their solvent power to putrefaction, and that, when perfectly fresh and prepared rapidly in cool weather, they possess scarcely any influence of the kind alluded to. The solvent power of the infusion was always at a minimum when it was just made, and at a maximum when putrefaction was complete. Dr. Brinton found that the process occupied from two to six times as long as was the case when gastric juice was the solvent employed; and he is finally of opinion, that Dr. Corvisart's experiments in nowise prove that the pancreatic juice is endowed with the power to dissolve albuminous matters in the digestive canal. Since, however, as he himself admits, he has not followed Corvisart in the vivisections with which he has further sustained his views, he has scarcely acquired the right to speak so decidedly upon the main subject in question.—(*Ibid.*)

IV.—VULPIAN *on the Effects of Direct Excitation of the Liver and Kidney.*

M. Vulpian experimented in the following manner: An animal was killed by curare, and the action of the heart sustained by artificial respiration. The abdomen being opened, and the liver exposed to view, it was mechanically irritated by passing the point of a pin rapidly along its surface, so as to excite, but not to wound; the slight furrow thus made disappeared at once, and a line of vascular injection took its place. At the same time a new furrow formed, and along its centre a narrow elevation of the tissues was observed, corresponding to the line traced by the pin-point. Similar effects were attained to in experiments upon rabbits, dogs, etc.

M. Vulpian also observed, that the mechanical stimuli were better for observations of this nature than any galvanic arrangement—a fact also noted by M. Brown-Séquard some time since. A like series of researches upon the capsule of the kidney gave similar, or but slightly different results. The results thus obtained M. Vulpian ascribes principally to the irritability of the small vessels beneath the covering of the glands in question, while he believes, also, that the experiments indicate the existence of contractility in the extra-vascular tissues of the several organs here spoken of.—(*Comptes Rendus de la So. de Biol.*, 1858, p. 8.)

V.—*On the Reactions of the Medullary Substance of the Supra-renal Capsules.* By M. VULPIAN.

M. Vulpian, following up the researches of Virchow, Harley, and M. Colin, on the effect of reagents on the supra-renal capsules, observes that an infusion of the medullary substance gives, with the salts of iron, a deep blue or violet tint; and that a large number of substances produce in it a rose color—among these are iodine, chlorine, bromine, alkalies, etc. M. Cloez, who assisted M. Vulpian, failed to isolate chemically the substance which produced these reactions.

Whatever may be this material it is found in all animals, and reveals itself by characteristic behavior with certain tests. It exists only in the medullary portion of the gland, and is a product of the secretion of the organ. Its presence enables us to distinguish these from all other organs, no one of which gives the same reactions.

The author thinks that it is quite certain that the supra-renal capsules are blood glands, and that they pour into the circulation a product of secretion peculiar to themselves. The supra-renal capsules do not become fully active until after birth.—(*Comptes Rendus de la So. de Biol.*, Paris, 1858, p. 14, *et seq.*)

VI.—*Notes on the Phenomena which occur in the Tails of the very young embryo of Frogs, when they have been detached from the body.* By M. VULPIAN.

Spallanzani has stated that when the tail of the tadpole is cut off a process of regeneration takes place, after which the tail is reproduced. This experiment has been often tested, and is constantly successful. I have seen the new part form again after it had been several times taken off. Until now, physiologists have rarely made it a matter of research as to what became of the tail after it was cut off. Moreover, no results can be obtained by operating on well-developed tadpoles. In this condition the tail loses all movement as soon as it is separated from the body, unless the section have been made close to the base, because it may then contain a very small portion of the spinal marrow, which in the tadpole passes a little beyond the posterior portion of the body; the tail, at all events, soon becomes decomposed. The case is not similar when the experiment is made upon the very young embryo of the frog, at the time when their gills begin to form. The tail detached from the body lives some time, and interesting phenomena occur in it. I discovered this when it was too late to procure any more frogs' eggs, so that I was unable to vary the experiment in many ways, which I intend to do next year. The tails detached from the bodies frequently live several days, manifesting their existence by the motions which they make when stimulated, or when they are exposed to contact with the air, which appears to be a source of irritation. These motions consist in a series of flexions and a lifting up of the tail as in the act of swimming. But life is also manifested by yet more important and singular phenomena. At the time when the experiment begins the tail is formed of the central axis and of two membranous portions, one inferior, the other superior, the whole constituting the caudal fin. All the elements in these different portions are in their first stage; the epithelial cells, the muscular fibres, the nervous fibres, the vessels, and the blood. Without entering into details, which I shall enlarge upon in another publication, I may say that these tissues, examined daily, gradually attain perfection; they lose their fœtal character, the elements are multiplied, and, at the same time, the vitelline granulations which they inclose disappear completely. A cicatrice is formed in the neighborhood of the section; a new portion is here added to the tail, and this portion, which may be about as one-eighth to the whole length of the tail, seems younger; it is more transparent, and has no central axis, and the cells are filled with a larger number of granulations. This growth of cells takes place at the expense of the pre-existing cells; there is no intussusception. The tail flattens out without becoming larger. The vessels are seen to ramify; star-shaped cells give birth to capillary blood-vessels and probably to lymphatics; cutaneous pigment cells appear. The groups of muscles which are separated by intersections, and which form a large portion of the axis, are more clearly defined; these intersections are crossed by distinct vessels which give rise to a net-work of membranous lamina; in these vessels are seen stationary blood-globules, which become modified while the tail lives. In the only experiment which I could extend to any length, a tail, cut upon the 9th of April, 1858, was yet alive on the 27th; that is to say, at the end of eighteen days; but it was then almost dead, and was sacrificed for more complete examination. At the time the tail was cut off the blood-globules were entirely round, almost colorless, and very granular. During the last days of its existence the granulations had diminished in number, and were exceedingly fine; several globules were oval, and at the last they became of a marked yellowish tint.

I wished to make these experiments upon the embryos of the triton, but I could not succeed. They offer less resistance, and the cohesion of their elements is not so strong, so that they fall rapidly into decay Nevertheless, I preserved the tail of the larva of the triton, which lived six days; the section had separated from the body not only the tail, but also the posterior half of the larva. No real scar was produced, but drawings, made every day with the camera, showed considerable changes in the length and shape of the caudal portion of the segment. The elements of this portion underwent notable modifications; but the length of the experiment did not admit of their being as profound as those in the elements of the tail of the embryo of the frog.

Thus the tail of the embryo of frogs, detached from the body, may live twenty days, and be the seat of the most incontestable vital phenomena. This cicatrization which occurs, this new portion which is reproduced, are tendencies to restoration. As in animals still lower, life, at this stage, undergoes segmentation, if we may be allowed the use of such a phrase. But as the vital force begins to resume its functions, the elements which it renders active are multiplied and perfected, and gradually attain to a higher organization. Circulation thus becomes an imperious necessity, either to convey new materials or to carry away the tissues already broken down. Finally, a multitude of minute molecules are deposited in the midst of the tissues, and life becomes extinct.—(*Comptes Rendus de la Société de Biologie*, 1858, p. 31.)

PATHOLOGY AND THERAPEUTICS.

BY EMIL FISCHER, M.D.

I.—*On Fatal Steatosis* (*Fatty Degeneration*) *of the Liver and Kidneys.* By PROFESSOR ROKITANSKY.

Prof. Rokitansky states that several cases of death occurring after an apparently acute disease, had recently attracted his attention, first, on account of the post-mortem appearances they presented; and, secondly, from the circumstance that acute disease and its symptoms were evidently owing to uræmia which had developed itself slowly and imperceptibly, but had suddenly assumed a very violent character. This uræmia was caused by a disease of the kidneys, which undoubtedly had the same relation to a disease of the liver as the peculiar condition of the kidneys observed in acute atrophy of the liver bears to that affection. The very numerous cases which the author had examined since the year 1839 showed that in acute atrophy of the liver the kidneys always undergo a change essentially analogous to that of the liver; but that this change is not necessarily proportionate to the degree of destruction to which the substance of the liver had been subjected; it consists in a flaccid, collapsed, softened, and even diffluent state of the renal tissue, accompanied by icteric discoloration, anæmia, and ecchymoses, particularly of the cortical substance. Further examination reveals a molecular disintegration of the epithelial cells, accumulation of fat in some of them, the cells being swelled in consequence of this accumulation, and, finally, the presence of fat in large quantity. This condition, and the diminished secretion of urine attending the disease, render it highly probable that a corresponding degree of uræmia coexists in such cases. Frerichs (*Klinik der Leberkrankheiten*, 1858,) expresses himself in the following manner, referring to the observations made by Späth, (*Wiener Medizinische Wochenschrift*, 1854:) "There is not as much attention paid to the kidneys as they deserve. Besides the deposit of pigment owing to the icterus, I found that the epithelial cells of the glands were infiltrated with granular matter, and, for the most part, in a state of fatty degeneration, and that the tissue itself was flaccid and soft. These cases occurred mostly among pregnant women, in whom Späth has made the same observation. Whether this renal disease is found in the generality of cases, I leave undecided; the peculiar change of the urine, the disappearance of urea from it, and the accumulation of the latter in the blood—further, the transitory albuminuria, etc., point, at any rate, to a coexisting affection of the kidneys."

In the present state of our knowledge, the most plausible view about the relation of the disease of the liver to that of the kidneys seems to be that the latter is dependent upon, or secondary to, the hepatic affection.

The cases referred to in the beginning of this memoir consisted in *steatosis of the liver, accompanied by a high degree of steatosis of the kidneys;* their importance rests upon the possibility of proving them to be parallel to the cases of acute atrophy of the liver and the analogous renal affection which coexists with it; our task consists, therefore, in showing that the steatosis of the liver is the primary, the steatosis of the kidneys, however, the secondary disease, and that the symptoms, as well as the fatal termination, are owing to uræmia, (to the disease of the kidneys.) The material afforded by the observation of cases is unsatisfactory, owing to the circumstances under which the observations were made; and although the post-mortem examination furnishes very useful and complete data, we can presume but an attempt at the solution of the question. It will, nevertheless, hardly remain doubtful that there exists a steatosis of the liver which leads to a fatal termination by means of an analogous degeneration of the kidneys. The only statements which have reference to our subject are found in *Wunderlich's Hand-book;* in treating of fatty liver, (vol. iii. part 3, p. 327,) he says, for instance: "Only when the disease is rapidly developed, pain, fever, and even serious cerebral symptoms, with delirium, sopor, prostration, and a speedy dissolution are observed." And in speaking of fatty degeneration of the kidneys, (ibid., p. 453,) he remarks that it sometimes accompanies fatty degeneration of the liver.

After these preliminaries the author communicates three cases observed by him, all of which present one and the same post-mortem appearance; also the symptoms noticed at the sick-bed coincide with each other. After having carefully examined these cases, the author continues his attempt at the solution of the question proposed above, as follows:—

"It is evident that in our cases we have not to deal with that steatosis of the liver which occurs so commonly in the course of consuming suppurative processes, but with fatty livers, as they not rarely develop themselves to a high degree at the side of an abundant formation of fat in the areolar tissue, without the disease being always attributable to gross feeding. Further, it must be understood that the steatosis of the kidneys does not present that form which results from Bright's disease. Neither do the post-mortem appearances of the kidneys exhibit all those characteristics which mark this consecutive degeneration of the renal epithelium, nor do the symptoms during life indicate that Bright's disease and albuminuria existed and had passed, with the steatosis of the kidneys, into a second degenerative stage. Under these circumstances it can hardly admit of doubt, that the steatosis of the kidneys supervened secondarily upon the primary steatosis of the liver; and if we consider the high degree of steatosis of the kidneys, and the deficiency of urine in the urinary passages on one side, and the very slight manifestation of the signs of cholæmia on the other side, it is just as little to be doubted that the symptoms of the disease, appearing suddenly and increasing rapidly until death, are owing to the suppression of the urinary secretion—that is, to uræmia.

There exists thus a steatosis of the liver, occurring in individuals inclined to the formation of fat, to which sooner or later a steatosis of the kidneys is added, both which diseases attain slowly and imperceptibly so high a degree that, finally, a cessation of the biliary and urinary secretion supervenes, and, after a slight degree of icterus, death rapidly sets in from uræmia and a hemorrhagic decomposition of the blood. The similarity of this combined disease of the liver and kidneys with acute atrophy of the liver and the degeneration of the kidneys supervening upon it, is unmistakable; it will become still more evident, if it can be demonstrated that in the latter disease the affection of the kidneys never fails to make its appearance in a corresponding degree, and that the symptoms attending it are, for the most part, of a uræmic character.

The cases reported by the author have arrested his attention, not only on account of the marked pathological changes of the liver and kidneys, but also on account of the individuality of the patients concerned. He does not doubt that cases of the same kind have occurred before, but have escaped notice and recognition, and that especially some of those not rare cases, where neglected drunkards perished unnoticed and without medical care, or died after a short sojourn in the hospital, under sopor and delirium, belonged to this class.—(*Zeitschrift der K. K. Gesellschaft der Aerzte zu Wien*, 8 August, 1859.)

II.—*On Abscess in the Anterior Mediastinum.* By Prof. Guntner.

Prof. Güntner, having observed four cases of abscess in the anterior mediastinum, gives the following description of this disease:—

Before the swelling appears, there exist, for a longer or shorter period of time, symptoms which are referable to compression of the parts forming the posterior boundary of the anterior mediastinum; they consist of oppression of the chest, difficulty of breathing, dull and oppressive pain behind the sternum, cough, sometimes a tickling sensation in the larynx with inclination to vomit, palpitation of the heart, cyanosis of the face, and fever of various intensity. The diagnosis becomes certain only with the appearance of the swelling; in the majority of cases the swelling comes on quickly, extends over a considerable space, is in the beginning indifferent, but little painful, and exhibits no inflammatory character, or inclination to open; at the same time the subjective symptoms decrease in intensity. But as the exudation generally proceeds to softening, the swelling increases in height, becomes more concentrated, and, under inflammatory symptoms, prepares itself to burst; the fever remains a constant companion, and exhibits either a remittent or intermittent character. Perforation takes place most commonly on the left side, at the junction of the second rib with the sternum. Besides the influence of cold, no important cause could be ascertained to give rise to the disease, and it must, therefore, be regarded as an idiopathic inflammation of the cellular tissue in the anterior mediastinum.

The prognosis of the disease depends upon the rapidity of its course, the amount of exudation, and the quickness with which the latter undergoes softening. The dangers to be feared are perforation into the cavity of the pleura, then secondary pleurisy, pericarditis, pyæmia, and sinking of the system from long-continued suppuration.

The treatment is partly general, partly local. The general treatment can be but symptomatic, slightly antiphlogistic in the beginning, and afterwards tonic. The local treatment consists at first in the application of dry heat; later, when the formation of an abscess becomes distinct, an opening should be made as early as possible in the spot where the tension is greatest. The incision should be small, as it enlarges itself by subsequent ulceration. Free exit should be given to the pus; the dressing, consisting of fenestrated lint and cotton with cerate, should be often changed, and absolute rest should be enjoined. When the swelling and suppuration have decreased, the œdema and fever have ceased, and the patient can move without pain, he may be permitted to enjoy the fresh air. Only in cases where a dangerous pressure is exerted in consequence of the retention of pus, it may become necessary to increase the depth of the incision, trephine the sternum, resect the ribs, etc.; but patients are rarely inclined to subject themselves to these operations.—(*Oesterreichsche Zeitschrift für praktische Heilkunde*, 1859, 10–12.)

III.—*On the Treatment of Chorea by Cauterization.* By DR. HAMON.

Dr. Hamon has treated two cases of chorea with the potential cautery; in one of them the affection had assumed a very serious form, the convulsions involving nearly the whole body, and continuing unabated even during the night. The use of sulphur-baths, and the systematic administration of tartar-emetic, according to the method of Gillette and Bonfils, having produced no amelioration in the condition of the patient, Dr. Hamon applied amianth, soaked in concentrated nitric acid, to the side of the dorsal and lumbar parts of the spinal column, in such a manner that sixty small punctiform burns were produced at a distance of about one centimetre from each other, which healed in eight to twelve days without leaving any distinct cicatrix. On the evening of the same day the patient could already speak with greater ease, passed a comparatively quiet night, and the convulsions had lost much of their intensity. The operation was repeated twice, at intervals of several days, and effected a complete cure within three weeks, the disease having existed one month before the treatment was commenced.

In the second case, the disease presented a milder form, and affected only one side. After using sulphur-baths, without any benefit whatever, the patient, a girl sixteen years of age, was subjected to the treatment by cauterization; the cautery was applied only once, at eighty different points, and as in the former case, the symptoms were decidedly ameliorated the same evening.

The pain attending the operation is said to be very slight and transient; the œdema occurring in the commencement disappears very soon, and no suppuration takes place if the application is made but superficial.—(*L'Union Médic.*, No. xxx., 1859.)

IV.—*Professor Skoda's Formula in Scorbutus.*

Professor Skoda, of Vienna, employs the following preparation with advantage, associating it also with the other means generally had recourse to:—

Decoction of malt with fir sprouts, 275 parts; yeast, 25 parts; and syrup of orange-peel, 25 parts; a tablespoonful every two hours.—(*Bull. de Thérap.*, tome lvii., 1859.)

V.—*Saline Injections in Diphtheritis.* By M. ROCHE.

M. Roche states that he has been so successful in some cases in which he has tried the injection of a solution of chloride of sodium into the throat, that in his next case he is disposed to employ it as the sole means of treatment. He practices, in fact, a continuous, or almost continuous irrigation of the throat, by means of Eguisier's irrigator, provided with a canula having a very small jet. He believes that it is in such irrigations, whether employing salt, alum, or the chlorates, we should seek for curative agents.—(*Union Médicale*, No. 88.)

OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

BY EMIL FISCHER, M.D.

I.—*On Amputation of the Shoulder-blade as a Method of Embryotomy.* By PROF. LEVY.

The author remarks that it would be a very desirable progress in the obstetric art if embryotomy could be wholly dispensed with, but that at the present time a total abolition of its practice was impossible. Among the cases of labor which may render this operation necessary, there are some, of not rare occurrence, in which, on presentation of the shoulder with descent of the arm, turning, at the right time, has been neglected, and in consequence of it the shoulder, with the side of the chest, is pressed down so firmly into the pelvis, while the uterus, in a state of abnormal contraction, incloses the child so tightly that turning is quite impracticable. In such cases perforation and evisceration of the thorax has been commonly recommended; some, for instance Dubois, advise decapitation of the child; others, among them Cederschjoeld, breaking or cutting through of the spine; and quite recently, Heyerdahl and Faye recommend sawing it through by means of a chain-saw. The proposition of the author is made with the object of rendering turning, with the least possible mutilation of the child, practicable, and is only an improvement upon the inadequate attempts at operation which have been made since old times. While already in the remotest ages obstetricians endeavored to remove the prolapsed arm partly by twisting it off, partly by different modes of amputation, without gaining real advantage, it is possible to obtain, at least in many cases, a favorable result by severing the scapula from the body together with the arm. It is sufficient to contemplate the size of the arch which is formed at the skeleton of the child by the spine of the scapula, the acromion, and the clavicle, in order to become aware of the advantage gained in this way; but it becomes still more evident, if the arm with the respective shoulder-blade and clavicle is removed in the dead body, and the two halves of the thorax are compared with each other. In well-developed bodies of children, the author found that the breadth of the shoulders was diminished as much as one inch and a half by this operation. The breadth of the shoulders being thus reduced, and additional room being gained by the removal of the whole length of the scapula, it will not be impossible to introduce the hand along the chest, and to perform turning without any fear of the danger which arises from the sharp margins and points of bones after embryotomy.

The operation is executed with but little difficulty. The operator draws the prolapsed arm tightly downward, and thereby removes the anterior or posterior margin of the scapula so much from the thorax that it forms a distinct projection, and can be easily felt through the soft parts. This being done, an assistant fixes the arm in this extended position, while the operator, having applied some fingers of his left hand to the projecting margin of the scapula, introduces with his right hand Smellie's scissors along them, and divides the soft parts within and along the margin of the scapula. Guarded by the shoulder-blade itself, the instrument easily penetrates, by small sections, between the subscapular and great serrate muscles, and if the arm is now gradually turned in proper directions, the partly amputated shoulder-blade is removed so much from the body that the section of the soft parts at its opposite margin can be, under protection of the fingers, easily accomplished. At last the clavicle, which is already partly severed from the thorax by the tractions made at the hand, is removed by a single cut of the scissors.

Within the last few years the author has performed this operation, with subsequent turning upon the feet, in two cases. In a third case, complicated with narrowness of the pelvis, the chest was compressed to such an extent that the ribs, being forcibly bent, hindered the introduction of the hand; the author overcame the impediment by subcutaneous section of some of the ribs, the great flaccidity of the integuments of the fœtus inducing him to adopt this method, by which he was able to avoid the danger of injury by the sharp margins of the bones which would have otherwise projected. Dr. Raw, also, executed the same operation successfully in a case of embryotomy; and a Norwegian physician informed the author of a case in which, believing that he was cutting through the neck, he, by mistake, severed the scapula from the body, and was in consequence able to perform easily the operation of turning.—(*Bibliothek für Laeger*, Bd. x., p. 431; *Schmidt's Jahrbücher*, April, 1859.)

II.—*Contribution to the History of Extra-Uterine Pregnancies.* By PROFESSOR HECKER.

The researches of Prof. Hecker are founded upon a great number of cases, collected from various authors. They were undertaken with the object of investigating the different varieties of extra-uterine pregnancy separately, which in the statistics, published up to the present time, have been generally mixed together. The author occupied himself principally with the study of tubal, interstitial, and abdominal pregnancy.

Tubal pregnancy.—According to the opinion generally accepted, this variety is the most frequent. Prof. Hecker thinks, on the contrary, that it is rarer than abdominal pregnancy; the latter amounts to 132 in the tables which he has compiled by collecting indifferently all the cases of extra-uterine pregnancy on record, while tubal pregnancy is represented by only 64 cases. Prof. Hecker, moreover, does not share the widely-spread opinion, according to which tubal pregnancy is more frequent in multiparæ than in primiparæ; of 53 cases of tubal pregnancy there are 16 which relate to primiparæ, and 37 which refer to multiparæ. The proportion of multiparæ to primiparæ is here even smaller than for pregnancies in general.

The tubal pregnancy is preceded, in a great number of cases, by a long interval, during which the woman had not conceived, and this remark applies as much to primiparæ as to multiparæ. These two anomalies seem to be the effect of one and the same cause, which will be mentioned by-and-by.

In all the cases collected by Prof. Hecker, with one exception, the tubal pregnancy terminated fatally. The only case of cure on record has been reported by Prof. Virchow, and relates to a woman who presented in June and July, 1848, all the symptoms of an internal rupture; she recovered, and died afterwards, on the 17th of July, 1852, of gangrenous pneumonia. The fœtus, in this case, had not left the tube, although the latter had been ruptured. This termination has, perhaps, presented itself in other cases, but the diagnosis remained uncertain in them. It is also possible that, under some circumstances, the fœtus may die at an early hour, and undergo the cretaceous transformation. The cases where the tubal pregnancy transforms itself into a secondary abdominal, or a sub-peritoneo-pelvic pregnancy, are not any more favorable than those where this transformation does not take place.

The rupture of the tube has been fatal, in two-thirds of the cases, at the end of from six to twenty-four hours; only in one case ten days passed before death occurred. The rupture was produced 26 times in the first two months, 11 times in the third, 7 times in the fourth, and once in the fifth month.

The fœtus occupied the left tube 37 times, and only 27 times the right tube. These numbers confirm an opinion, adopted long ago.

The tubal pregnancy is often accompanied by various adhesions of the internal genital organs, produced by false peritoneal membranes. These adhesions occupy, according to Prof. Virchow, mostly the left side, and it seems rational to attribute to them an important part in the etiology of tubal pregnancy; to the same adhesions also the sterility seems to be owing which often precedes tubal pregnancy. The influence of these bands was especially manifested in a case of Prof. Virchow, in which the fœtus had developed itself at a distance of one inch and a half from the abdominal orifice of the right tube, between two points glued to the neighboring parts by peritoneal adhesions.

In speaking of the pathological anatomy of tubal pregnancy, Prof. Hecker relates a very curious case of Dr. Drejer. The fœtus had developed itself in the right tube, which was inserted at the point of junction of the body and neck of the uterus; the corpus luteum, measuring half an inch in diameter, occupied, on the contrary, the left ovary. It must, therefore, be assumed that the ovum, after having enterted the uterus through the left tube, had slipped afterwards into the orifice of the right tube, which occupied a much lower place than usual. It is, in fact, impossible to conceive that the right tube could have reached as far as the left ovary, and embraced it at the moment when the ovum fell. Prof. Scanzoni has, besides, published a case of pregnancy in a rudimentary cornu uteri which can be explained only by an analogous migration of the ovum.

In 40 cases of tubal pregnancy, the uterus was augmented in size in 24; the decidua existed 25 times; three times the uterus had developed itself to a certain degree without there being any decidua discoverable. In two cases only it is said that the uterus was not at all modified.

2. *Interstitial pregnancy.*—Dr. Hecker could collect but 26 cases of it. The irregularities in fecundation, already pointed out in relation to tubal pregnancy, are quite as remarkable with reference to this variety. The termination has constantly been fatal, and death has always ensued very shortly after the rupture, (in six to twenty-six hours in the majority of the cases.) The rupture took place once at the end of four weeks, twice at the end of two months, 12 times in the third month, 3 times in the fourth, and once in the fifth; 6 times, finally, it occurred only in the eighth or in the ninth month. Also here the pregnancy occupied oftener the left side (17 times in 24 cases) than the right, and the internal genital organs were often attached to the surrounding parts by peritoneal bands. The development of the uterus was generally much more considerable than in tubal pregnancy. The cavity occupied by the ovum was always separated from the cavity of the uterus by a complete partition, and the tube itself was mostly impermeable.

3. *Abdominal pregnancy.*—It is, like tubal pregnancy, most frequently observed in women between the age of thirty and forty years. Multiparæ are more liable to it than primiparæ; the proportion is 90 to 15 in the cases collected by Prof. Hecker, (the usual proportion of multiparæ to primiparæ being 3½ to 1.) The irregularities in the conceptions are again distinctly pronounced in a great number of the women.

The mortality of abdominal pregnancy is not as considerable as is generally believed; among 132 cases Prof. Hecker found 76 cures and 56 deaths, which gives a mortality of 42 per cent.

In the great majority of the cases, the pregnancy arrived at least at its habitual term, and the child could, in exceptional cases, live much beyond this period. In a case of Grossi, the movements of the fœtus were perceived by the mother during twenty-three months; moreover, in some fœtuses, mummified under these conditions, perfectly developed teeth have been found in the jaws. There is even a case reported by Dr. Schmitt, in which, as it is stated, the pregnancy lasted three years, and gastrotomy having been performed after the death of the mother, a living child was removed. This fact seems nearly incredible, and still the circumstances under which it has been observed hardly permit us questioning its authenticity.

The pains which the patients feel so often at the end of an abdominal pregnancy seem to be owing, at least in a certain number of cases, to contractions of the abnormal sac formed round the ovum, and not to contractions of the womb. In a certain number of cases, in fact, the presence of unstripped muscular fibres in the wall of this sac has been proved; the existence of these contractions has been, moreover, demonstrated by Prof. Hohl in an unequivocal manner. In his case the sac, which was seated behind the posterior cul-de-sac of the vagina, and near the posterior wall of the pelvis, could be easily felt, and was observed to contract distinctly, and in a very energetic manner, during the pains. On autopsy the coats of the ovum were found to contain many organic muscular fibres.

Among the 76 cases of cure, there were 28 where the ovum was evacuated by the rectum, 17 where it was mummified, 15 where it was discharged through the anterior wall of the abdomen, 11 where gastrotomy was performed, and 3 where the child was extracted through the vagina. In the remaining two cases no precise information could be obtained.

The 56 fatal terminations distributed themselves in the following manner:—death by exhaustion, 18 times; by peritonitis, 12 times; by rupture and hemorrhage, 7 times; by internal strangulation, twice; by dropsy, once; in consequence of operations, 12 times; undetermined cases, 4.

In 26 operations, there would have been 14 cures and 12 deaths; but it is more than probable that these numbers are too favorable. Gastrotomy would count 11 successes and 5 deaths; in the 11 cures, the fœtus was dead 8 times before the operation, 3 times it was alive at the moment of the operation, and twice it was extracted alive. In the 5 cases which became fatal to the mother, the fœtus was dead in 2; 3 times it was extracted alive.

The extraction by the vagina counts 3 cures and 2 deaths; puncture alone, or associated with cauterization, has been fatal in 4 cases; in one case, finally, the fœtus was extracted from the bladder by the hypogastric section, and the mother died.

These numbers lead to the conclusion that, in general, all operative interference, in cases of abdominal pregnancy, ought to be renounced; there is hardly any indication for it except when it becomes a question whether to save a living child, arrived at term.—(*Monatsschrift für Geburtskunde*, February, 1859.)

III.—*On the Induction of Premature Labor by Uterine Catheterism.* By Prof. Braun, of Vienna.

Professor Braun, of Vienna, states that he has for several years given a preference to this mode of inducing premature labor; inasmuch as it is very certain, operates rapidly and safely, brings on the pains with gradual energy, gives rise to no ill consequence, such as congestion or injury of the uterus, or detachment of the placenta, and is performed by the single application of a simple instrument. One disadvantage of the procedure is, that the membranes may become somewhat easily ruptured, especially in primiparæ. In order to prevent this accidental rupture, the author softens in hot water the end of a well-oiled catgut bougie, a foot long, and from two to three lines thick, and passes it along the index finger with a twisting movement into the uterine cavity, until only a portion, equal to two fingers' breadths, remains in the vagina. The bougie so passed always excites pains in from six to twenty hours, does no injury to the membranes, and is to be removed only just before the discharge of the waters, or the birth of the child. The employment of a gum catheter, having a very thin, flexible stilette, is usually also attended with good effect. Its application is difficult, however, when the vagina is narrow, and deviates from the pelvic axis. During the session 1857 and 1858, Professor Braun employed catheterism twelve times, nine children being born alive, and six dead—three being twin-births. Of the mothers eight recovered, and four died during the puerperal state, pneumonia, tubercle, and Bright's disease having been respectively the causes of death. The labor was terminated at an average period of twelve hours after the introduction of the catheter. Brief accounts of these twelve cases are subjoined.—(*Wien medizin. Wochenschrift*, 1858, No. 46; *Med. Times and Gazette.*)

IV.—*On the Treatment of Uterine Hemorrhage by Ruta and Sabina.* By PROF. BEAU.

Professor Beau attributes to ruta as much of a special relation to the uterus as there exists between digitalis and the heart, nux vomica and the cerebro-spinal system, cantharides and the bladder, and between belladonna and the muscular system. In this specific action upon the womb ruta is allied to sabina and ergot; the latter, however, Professor Beau does not consider as reliable in its effect as the two former medicines, particularly if they are given combined with each other; in cases, therefore, where the indication is perfectly plain, and urges to active interference, he does not lose time by experimenting with the unreliable ergot, but prescribes at once the following combination:—

℞.—Pulv. Rutæ, gr. iij; Pulv. Sabinæ, gr. j; Syr. Spilis, q. s.; ut fiat pilulæ, dt. tal. doses, No. vi. S. One pill every morning and evening.

Under this medication the hemorrhage immediately decreases, and soon stops entirely. The recommended mode of treatment is particularly indicated when the hemorrhage is caused by remaining parts of the placenta or fœtus, or when it is owing to an atonic condition of the uterus, the principal object of treatment being then to excite energetic contractions of the uterus. If there are symptoms of chlorosis, Dr. Beau prescribes, after the cessation of the hemorrhage, iron in combination with small doses of ruta.—(*Union Médicale*, No. 7, 1859.)

V.—*A Convenient Mode of Treating Vaginitis and Superficial Inflammation of the Cervix Uteri.* By M. FOUCHER.

M. Foucher mentions, in the *Bulletin de Thérapeutique* of the 15th ult., that in the above affections he prefers ointments to injections. In simple vaginitis, he introduces every morning, with the assistance of the speculum, a good-sized pledget of cotton wool, well smeared over with tannin ointment, into the vagina, bringing the pledget in contact with the cervix. By means of a thread tied to it the wool can be removed by the patient, either in the evening or on the next morning. Every time the pledget is taken off an injection of cold water, or of a solution of alum, should be used to wash the mucous membrane of the vagina. By a little practice patients soon learn to introduce the pledget themselves, the surgeon then cauterizing the inflamed surfaces to hasten cicatrization.

M. Foucher uses the same treatment for fluor albus with much success; but he tries, at the same time, to modify the morbidly disposed organism with the following pills: Extract of rhubarb, quinine or extract of bark, steel reduced by hydrogen, of each half a drachm—for forty pills. To counteract constipation, the author has found half a grain of powdered belladonna, given every night in the form of pill, extremely useful.—(*London Lancet*, August, 1859.)

VI.—*On the Influence of Sex on Diseases of Children.* By DR. ROBERT KUTTNER, of Dresden.

That sex exercises a decided influence upon diseases and their course long before the development of puberty, is well evinced in early infancy. It is one of the important tasks of pathology to study this phenomenon more closely, to establish the facts having relation to it by accurate statistics, and to find out, as far as possible, the real cause of the same. Dr. Küttner's treatise is a valuable contribution toward the solution of this question, as his statements are founded upon the statistics of ten thousand cases treated in the Children's Hospital of Dresden, during a period of over ten years. Referring our readers for particular data to the treatise itself, we only give the conclusions which the author lays down as the result of his statistical researches. They are the following:—

1. Boys are, particularly in the first year of their life, much more liable to diseases of the digestive organs than girls; they bear therefore an improper mode of feeding less easily, and die, the relative mortality of both sexes being equal, in an absolutely greater number of diseases of this kind.

2. Nervous and cerebral diseases are, especially from the fifth year, nearly twice as frequent in boys as in girls.

3. Boys are more disposed to umbilical and inguinal hernia than girls.

4. Girls, after their third, and particularly after their fifth year, are more inclined to diseases of the respiratory organs, and die of them in greater number.

5. The same is the case in regard to diseases of the heart.

6. In acute diseases of the blood the difference of sex does not seem to exercise any influence; chronic anæmia, however, and scorbutic cachexia, are much more frequent in girls than in boys, especially after the eighth year of life, (in the proportion of ten to one.) Scrofula and tuberculosis are, at the beginning, nearly equal; but from the fifth year pulmonary tuberculosis is more frequently met with in girls. Rachitis occurs in equal number in both sexes, but is often somewhat later developed in girls, and is of longer duration in them than in boys.

7. Chronic diseases of the skin (particularly of the scalp) are, after the ninth year, more frequent in girls than in boys.

8. The same is the case in regard to swellings of the thyroid gland.—(*Journal für Kinderkrankheiten*, Nos. 1 and 2, 1859.)

VII.—*Prophylactic Treatment of the Sequelæ of Measles and Scarlet Fever.* By PROF. SCOUTETTEN.

M. Scoutetten, chief physician of the Military Hospital of Metz, advises frictions with warm sweet-oil all over the body, the face included, when the redness is gone. After this friction the patient is replaced in bed, where he should remain about two hours. The next day he should take a warm bath, and remain in it one hour. After the bath he is replaced in bed, and two or three hours afterwards, when the skin is quite dry, another friction is made similar to the first. This is generally sufficient to ward off the unpleasant and well-known sequelæ of the two above-named exanthematous fevers; but when the attack has been violent, and the dead epidermis has not completely fallen off, these means should be resumed until the dermis has regained its functions. M. Scoutetten has rarely gone beyond four frictions and two baths. These precautions being taken, the patients can, according to the author's experience, go out with impunity.—(*Gazette Hebdomadaire*, April, 1859; *Lancet.*)

VIII.—*On the Treatment of Hooping-cough.* By DR. J. WHITEHEAD.

It is too generally assumed that, except by change of air, hooping-cough cannot be modified by any treatment to a perceptible degree; that it is, at least, possible to abbreviate its course, is proved by the following statistics:—

In thirty-five cases of hooping-cough, admitted to the hospital clinics at Manchester, after an average duration of the disease of more than three months, a cure was obtained in less than twenty-five days at an average; and it is probable that not much more time would have been required, in order to obtain the same result, if the children had entered the hospital six or eight weeks sooner. That such would have been the case is proved by the fact that in eighty-seven cases in which the treatment was commenced after the second week of the disease, the average duration of the treatment was the same as in the first series of patients; the duration of the disease was thus reduced to thirty-seven days. The average duration of the disease was forty-two days in the totality of the cases, and one hundred and eleven days in those cases which had been neglected.

Among the eighty-seven cases of the second series, there were thirty-two in whom the average duration of the disease, at the time of their admission, had been eleven days; and fifty-five in whom it had been five days. In the former, the average duration of the whole disease was thirty-five days; in the latter, but thirty-two days.

The treatment employed consisted, in simple cases and in such in which the existing complications had been removed, in the administration of Dover's powder, either alone or combined with camphor, which was used either internally or in fumigations; in the use of emetics, belladonna, and of revulsives. In all cases opium or belladonna served as the basis of the treatment.—(*Third Report of the Clinical Hospital*, Manchester, 1859, p. 87, *et seq.*)

IX.—*On the Curability of Tubercular Meningitis.* By DR. O. BANG.

Although many physicians deny the curability of tubercular meningitis, (hydrocephalus acutus,) as, for instance, Camper and Trousseau, some others have proved from their own experience that a cure may be sometimes obtained, though such cases be of very rare occurrence. West saved, of thirty-four children, one; Guersant, of an hundred in the second stage, one; in the third stage, however, none. Rilliet, who has collected and compared all the cases of cure in the *Arch. Générales*, (December, 1853,) doubts many of the favorable cases, and admits only eight cases reported by others, and three observed by himself to have been real cases of tubercular meningitis. To these cases Liégard (*sur la nature et le traitement de la fièvre cérébrale*) adds a case of his own, and six observed by his father; the total number of cured cases on record are thus eighteen.

Those who maintain the incurability of the affection suppose that in the cases reported as cured, simple inflammation of the brain, or remittent fever, worm-fever, hydrocephaloid, etc. had been mistaken for tubercular meningitis. The author believes that an exact differential diagnosis between simple and tubercular meningitis can hardly be established. According to his opinion, meningitis consists in an active congestion, followed by an inflammation which assumes a different character when the blood is healthy, and when it is diseased; in the former case the disease is simple, in the latter it is complicated. *The tubercular meningitis is characterized by its occurrence in scrofulous children;* the meningitis is here complicated with a disease of the blood, and is thus to be treated according to the same rules which are observed in the treatment of any inflammation accompanied by a morbid condition of the blood. A complete cure is possible only when an amelioration of the crasis of the blood can be effected, and this is very difficult after a localization of the disease has taken place. Only if a meningitis appears suddenly without premonitory symptoms, and is accompanied by violent fever, abstraction of a considerable quantity of blood is necessary; the use of this measure requires, however, great caution when the disease commences more slowly, and the child bears the characters of the scrofulous cachexia.

A prophylactic treatment is indicated only in cases of the latter kind; it consists in the use of anti-scrofulous remedies and of derivatives, when the children have a disposition to congestion of the brain; at the same time all strong impressions upon the brain should be carefully avoided.

The author has treated three children in this manner, who had lost their brothers of tubercular meningitis, and in whom certain symptoms threatened an attack of the disease; blisters to the nape of the neck were of particular use in this instance. If the parents are scrofulous, or if there is a hereditary tendency in the family, Dr. Bang subjects the women to an anti-scrofulous treatment during their pregnancy, and has found this plan very successful in one case. Cold affusions upon the head while the child is sitting in a warm bath are very useful, not only as prophylactic, but also as curative means; if, however, the state of exudation has commenced, he uses, instead of them, powerful derivatives upon the shaven head, such as blisters, croton oil, ointment of tartar emetic, etc. In three cases in which considerable exudation had already taken place, the cure was very much promoted by an ointment composed of unguentum hydrargyri, tartar emetic, and ol. tiglii. In simple as well as in tubercular hydrocephalus, calomel, in doses of three to eight grains, is the most useful laxative; in chronic cases the author gives it, however, in smaller doses in combination with digitalis, as an antiphlogistic. As calomel seemed to promote vomiting, the author prescribed frictions with mercurial ointment on different parts of the body; this application was employed in two cases, which were cured. Two cases were treated with iodine in combination with other remedies, and also in these a cure was obtained by the author; in other cases, in which he used iodine alone, it seemed to diminish vomiting, but did not effect a cure.

In accordance with this experience the author considers tubercular meningitis curable, and is supported in his opinion by cases reported by reliable observers, in which all the symptoms of the disease were present, and which were, nevertheless, cured. If the physician is called in early enough, and follows the plan of treatment recommended above, there is, according to the author, hope of the disease being cured.—(*Bibliothek für Laeger*, No. 7, p. 241; *Schmidt's Jahrbücher*, May, 1859.)

X.—*Defective Assimilation in Infants; its Prevention and Treatment.* By Dr. Routh. (Read before the Medical Society of London.)

The object of this paper was to show that most of the mortality of infants was due to defective assimilation. Defective assimilation was almost always the result of want of breast milk, and the use of injudicious food; the disease was most effectively prevented by supplying this milk. Dr. Routh then detailed the result of breast milk exclusively given, artificial food without breast milk and with it, on the development and mortality of children, from tables of Drs. Merei and Whitehead; from which he showed that in proportion as breast milk predominated, in proportion was good development observed, and *vice versa*. He then showed that the most frequent diseases among children were abdominal diseases, occurring in the proportion of 23·4 per cent.; developmental diseases in that of 8·8 per cent. of all cases; rachitic diseases constituting 3·2 per cent.; atrophy or marasmus, 5·2 per cent. He believed, however, that all these were produced by defective assimilation, the former, in most cases, being sequelæ of it, atrophy or marasmus being only the more marked and characteristic stage.

Dr. Routh then described the disease as consisting of three stages: First, or premonitory, in which peevishness, some loss of flesh, occasional attacks of indigestion, acid eructations, etc. were most prevalent; in the second stage, *emaciation* was more marked, eyes became unusually bright, much loss of digestive power, sometimes with diarrhœa and lientery; third, or exhaustive stage, generally attended with diarrhœa, aphthæ, frightful emaciation, complete loss of digestion, etc. Sometimes the disease, from the second stage, passed on to tuberculosis, rachitism, and most developmental disorders, and not to the third stage.

Causes.—The predisposing causes were hereditary, tubercular habit, and exanthemata. Exciting causes—bad air, want of cleanliness, injudicious food, and especially an atmosphere contaminated by too many children being congregated together.

Post-mortem appearances.—Three kinds: Emaciation very great, loss of adipose, cellular, and muscular tissue, in all varieties; but in one, where diarrhœa had been present, red patches, or aphthæ over the alimentary mucous membrane, these aphthæ containing the oïdium albicans.

In other cases, also with diarrhœa, the mucous membrane exuding a reddish-colored mucus, intensely acid. In others, without diarrhœa or with it, Peyer's glands projecting, and enlarged in patches, as in Asiatic cholera. In all, undigested matter in the canal, with very fetid fæcal matters.

The disease seems to be gradual, passing on to entire loss of *primary* assimilation; the secondary still persisting, although inactive from want of assimilable matters to take up. Albuminous, starchy, and oily matters were not digested.

The *treatment* consists in supplying fatty acids, and artificially-digested animal and occasionally vegetable substances, especially human milk. If this could not be sucked, it should be collected in a cup and given by the spoon. Dr. Routh strongly animadverted here upon the absurd dogma, that it is wrong to mix human and cow's milk. He, on the contrary, believed the plan not only safe, but the very best practice in many cases, and the only means of saving an infant's life. Simple juice of meat, and this with vegeto-animal food, he had found most useful in fulfilling these indications. The remedies were of two kinds: 1st. Those calculated to increase cell growth and development. Phosphate of soda, producing an emulsion with fats, thus allowing of their assimilation; chloride of potassium, to dissolve carbonate of lime; phosphate of lime, to enable blood to take up more carbonic acid, and thus hold in solution more carbonate of lime; (these substances severally strengthening muscular and bony structure;) lime-water, to provide lime to blood. 2d. These last also acted as some of the remedies calculated to allay local irritation of the alimentary canal. Carminatives were useful, such as dill, but especially cinnamon-powder, to correct flatus and to check diarrhœa. Anodynes were also (however objected to generally) strongly recommended by the author. For the diarrhœa, when present, nitrate of silver and sulphate of copper were the best remedies. Wine was also found very serviceable, even if given in large quantities. These remedies, however, it must be confessed, proved in most cases of no avail in the third stage, which was, he might say, almost incurable; but they acted very effectively in the second and first stages.—(*Lancet*, June 18, 1859.)

Bi-Monthly Periscope.

SURGERY.

1. Excision of the Testis for Malignant Disease.—[In the Medical Times and Gazette of the 17th of September, we find a tabular statement of thirty-six cases of malignant disease of the testis, in all of which, with one exception, the gland was removed. As the table is too long for insertion, we can only add the comments upon these cases.]

Forms of Cancer to which the Testis is liable.—Of the above thirty-six cases it would appear that in almost the whole the form of cancer was the soft form of medullary. In several the structure of the diseased mass was firmer than that of a typical medullary growth, but in none did it approach that of true scirrhus. Modern histological investigations have indeed tended to show that true scirrhus, such as that so commonly seen in the mammary gland, for instance, is never met with in the testis. The supposed instances of it described by Sir Astley Cooper and other writers have proved, on microscopic examination, to be not cancer, but cartilage. It is quite possible also that examples of syphilitic sarcocele, with an unusual degree of induration, may occasionally have been regarded as scirrhus.

In Case 9 the original disease of the testis itself was simply cartilaginous, and the subsequent deposits in internal organs, which were very numerous, were of the same material. As to the malignancy of the disease in this case, there can, however, be no doubt, as the man died of its development in the lungs within a short period of the operation.

In Case 5 a "fibroid" tumor had been excised three months before from the scrotum, and the recurred one, which had involved the testis, if it did not originate in it, was of the same nature. This case probably stands on the border ground between true cancers and recurrent fibroids, and there is room for question as to the propriety of its being included in this series.

Cases 8, 11, and 18 are examples of the coexistence of medullary cancer, with well-characterized cystic development.

Age most liable to Malignant Disease of the Testis.—It would appear that all periods of life, excepting the senile, and including even those of infancy, are liable to the occurrence of malignant disease of the testicle. In the youngest patient in our list it began at the age of one year and eight months, while the oldest was 59. Taking the decennial periods, we have three instances of the disease occurring between the first and tenth years, one between 10 and 20, eight between 20 and 30, thirteen between 30 and 40, six between 40 and 50, and five between 50 and 60. The age stated in each case is that at which the patient came under surgical treatment for his disease, and the age at which the latter had first commenced was most probably about a year younger. Bearing this fact in mind, we can have no hesitation in accepting the conclusion, that the first half of adult life (from 20 to 40) is the period in which the testis is most liable to be attacked by medullary cancer.

The instances in which the disease began in early boyhood have a peculiar interest. It is an important fact that the testis should be so liable as it is to the attacks of disease (benign as well as malignant) at periods considerably prior to its full development, and to the assumption of functional activity. Parallel instances of disease in the ovaries or mammary glands of preadolescent girls are undoubtedly far more rare. The converse comparison holds good as it regards the age at which the function of the gland in question has either ceased or is greatly on the wane. We have in the present series no example of cancer of the testis later than the age of fifty-nine, while but a very small proportion of the whole are met with so late as the fifth decade. In females, as is well known, diseases of the breasts and ovaries are still very frequent.

Usual Rate of Progress of Cancer of the Testis.—Malignant disease of the testicle has often been taken, and very properly so, as a typical example of cancer. It is acute in its onset, and very rapid in all its stages of progress. The facts recorded in the above series fully bear out these statements, and the inference is of great importance in its practical aspects.

In Case 21, the only one in which the disease ran its course without surgical interference, the patient was dead within four months of his having first noticed enlargement of the gland, at which time he was in what he considered robust health. The duration of the disease in Mr. Kidd's case, which was probably a similar one, was exactly the same.

In Cases 16, 36, 20, and 17, although an operation was performed, and in several of which it in all probability prolonged life, the whole duration from first to last was only six, nine, twelve, and twenty-one months respectively. In Cases 1, 3, and 27, which ended fatally within a week or two of the operation, deposits of cancer were found in the lumbar glands, which must have induced death within short periods, even if the patients had recovered from the immediate effects of the operation. The average previous duration of the disease in these cases had been only eighteen months. In two or three instances in which durations of unusual lengths are assigned to the disease, it is not improbable that the testis during the earlier portions of the time had not been affected by cancer, but by some inflammatory enlargement, on which at a subsequent period cancer had become ingrafted. It is not at all unusual for cancer to attack organs damaged by previous chronic inflammations; and the fact that in the cases adverted to a recent rapid increase in size had been observed, is in favor of our supposition.

Treatment; immediate Results of the Operation of Excision.—Although not a few and very different schemes of constitutional treatment have been proposed for the management of the more chronic cancers, none have, we believe, been suggested as likely to retard the progress of malignant disease of the testis. In this instance, the question as to treatment is simply, Shall extirpation be performed or not? the alternative being certain and speedy death. As might be expected, therefore, under such circumstances, the propriety of extirpating a testis affected with malignant disease, provided the cord be healthy, is one of the rules in surgery about which there is no dispute. The operation *per se* is one of little or no danger if done early, while the gland is not enlarged beyond a certain size, while the cord is healthy, and before the lumbar glands have been affected. In nearly all the cases in our series in which death followed as a consequence of the operation, large tumors were found in the abdomen, which had been unsuspected previously, but which had no doubt exercised a most prejudicial influence on the patient's chance of recovery. That excision of the testis in itself is not an operation attended by any material risk, is proved by the facts that of the above series 26 out of 36 recovered from it, while of the cases to follow this report, in which the testis was removed for diseases of non-malignant nature, the proportion of recoveries was 26 to 1 death.

In determining which cases are best suited for operation, and those in which for the credit of surgery it will be well to decline using the knife, regard should be had to the size and duration of the tumor, to the condition of the cord, to the patient's general health, and to the indications of disease of the lumbar glands. If there be good reason to think that the lumbar glands are already enlarged, or if the cord be positively enlarged at a point above where it could be divided, an operation could only end in disappointment. Too much weight in either direction must not be allowed to attach to the state of the patient's health. In not a few instances, owing to its rapid rate of progress, the disease has advanced beyond hope of benefit by surgery, before the patient's aspect has assumed any very decided indications of malignant cachexia. In many of the cases in our list the statement is, that "the man was in good general health." On the other hand, it is quite possible that a patient might appear very cachectic from accidental causes, while still his lumbar glands were free from disease. The large size of the tumor, although "equaling that of a cocoa-nut," would not, of course, in itself deter any surgeon from attempting its removal, other circumstances being favorable. It must be granted, however, that it renders the prognosis much more serious.

Ultimate Result of Cases Operated upon.—As just stated, five out of the thirty-five cases ended in death within a week or two of the operation, and either as its immediate or indirect consequence. In five others (Cases 7, 28, 30, 10, 36,) the patients did not, while under observation, regain their health, and in four of these the disease already appeared to be recurring, *i.e.* within a month or two of the operation. In Cases 17, 20, and 30, although the patients regained good health after the operation, yet the disease recurred subsequently in internal organs, and death took place at the respective periods of three and ten months afterwards. In Case 16 the patient died within six weeks of the operation; not, however, from its effects, but from recurred and rapidly advancing disease. In Case 6 the patient was known to be in good health, but with suspicious induration of the inguinal lymphatics, six months subsequent to his discharge from the hospital. These cases deducted, we have remaining twenty in which, beyond the facts that the patients left the hospital well within short periods of the operation, we know nothing. Not a few of these men have, in all probability, since died of internal cancer; while there is a fair foundation for the belief that others are still in good health.

Mr. Cock has mentioned to us the case of a man whose testis he removed for medullary cancer, and who remained under observation and in good health for six years afterwards, being at last lost sight of in consequence of his emigration to Australia. This fact is the most important in relation to this subject that has come within our knowledge in the practice of the London Hospital. Whole histories of cases of malignant disease of the testis are much wanted in the literature of clinical surgery.—*Med. Times and Gazette*, Sept. 17, 1859.

2. ON THE DIAGNOSIS OF THE SACRO-ILIAC DISEASE. By *Mr. Erichsen*, Professor of Surgery in University College, London.—Mr. Erichsen gives the name of *sacro-iliac disease* to disease of the articulation between the sacrum and the pelvis. The diagnosis, he tells us, is not always easy, and he points out five affections with which it may be confounded—namely, neuralgia of the hip, sciatica, spinal disease, coxalgia, and disease of the pelvic bones.

1st. *Neuralgia of the hip* in young females may readily enough be confounded with the earlier stages of sacro-iliac disease. But the widely-spread and superficial nature of the pain in the neuralgic affection, the coexistence of the hysterical temperament, the sex of the patient, and the absence of all limitation of morbid action to the neighborhood of the diseased articulation, render the true nature of the affection sufficiently clear. The obliquity of the pelvis, which occasionally occurs in neuralgia of the hip, and causes apparent elongation of the limb, is readily removed when the patient lies on her back; whereas, in sacro-iliac disease, position does not affect the displacement of the limb on the affected side.

2d. *Sciatica.*—In this affection, the age of the patient, usually more advanced than that of the subjects of sacro-iliac disease; the seat of the pain, below the articulation, and its extent down the back of the limb; with the absence of elongation, will enable the surgeon to effect the diagnosis.

3d. From *spinal disease*, the diagnosis is usually sufficiently easy, for although the situation of abscess resulting from caries of the vertebræ may in many cases be the same as that which is occupied by the collections of pus resulting from "sacro-iliac disease," yet in caries of the spine, in the vast majority of instances, excurvation of the vertebræ has become prominently marked by the time that the abscess has assumed so great a magnitude as to occupy the inferior lumbar or gluteal regions. In those rare cases in which, as an instance that was recently under my care, caries of the vertebræ, with consecutive abscess, takes place without any angular curvature, it will be found that the patient complains of tenderness, on the surgeon percussing the spine opposite the seat of disease; that the spinal column has lost its flexibility, moving stiffly and as a whole; that there is an absence of that elongation of the limb on the affected side, dependent on displacement of the wing of the pelvis, which is so early observable in sacro-iliac disease; and lastly, that examination of the sacro-iliac synchondrosis neither elicits pain, nor reveals swelling, or any of the other signs of disorganization of that articulation.

4th. *Coxalgia* is the affection that is most easily confounded with sacro-iliac disease; and that from which it is of most importance to make the diagnosis. It is especially from that variety of hip-disease that commences in the acetabulum, that primarily involves the pelvic bones, and only secondarily implicates the joint, that it is difficult to distinguish sacro-iliac disease; and the importance of effecting this diagnosis is great when we reflect that these cases of hip disease may now successfully be subjected to operative interference, while sacro-iliac disease does not admit of relief or removal by these means. Now, the diagnosis between coxalgia in all its forms and the disease we are at present considering may be effected by attention to the following circumstances:—

(1.) The seat of pain on pressure. In hip disease the patient suffers most severely when pressure is exercised deeply behind and above the trochanter, in the hollow behind that osseous prominence, or when the compression is exercised against the anterior part of the hip-joint through the pectineus muscle. In sacro-iliac disease little or no pain on pressure is experienced in these situations; but tenderness is elicited by pressure upon the sacrum and along the line of junction between the sacrum and ilium behind and altogether away from the hip.

(2.) The movements that occasion pain are different in the two diseases. In hip disease, abduction and rotation outward, or pressure of the head of the femur into the acetabulum, aggravate, to a greater or less degree, often to an unbearable extent, the sufferings of the patient. In sacro-iliac disease the thigh, may be moved in all directions, abducted or adducted, rotated, flexed, or extended, while the patient is lying on her back, without any increase of suffering, *provided the side of the pelvis be fixed by the surgeon.* Should this precaution not be taken, the movement impressed on the thigh will be communicated to the diseased articulation and will necessarily occasion suffering.

(3.) The signs connected with the alteration in the length of the limb differ in the two diseases. In hip disease there may be, and usually is, in the advanced stages, considerable shortening. This never occurs in sacro-iliac disease. In the earlier stages of coxalgia there may be, as there is throughout in sacro-iliac disease, elongation of the limb. But there is an important point connected with this. The elongation in hip disease is always appreciable by measuring from the anterior superior spine of the ilium to the inner ankle. In sacro-iliac disease, however, the measurement between these two points on the opposite sides of the body exactly corresponds, the seat of the elongation being situated still higher up.

(4.) The alteration of the level and of the prominence of the two anterior superior spines, in sacro-iliac disease, may be confounded with that arising from the obliquity of the pelvis usually occurring in the early stages of coxalgia. But here also the diagnosis may be effected by observing that the displacement of the bone in sacro-iliac disease is permanent, and is not influenced by position. The obliquity of the pelvis in hip disease, giving rise to apparent elongation of the limb, is dependent on a twist in the lumbar spine, which may be rectified by placing the patient on his back, and using a little manipulation. The alteration in the level of the two ilia, in sacro-iliac disease, is not modified by change of position, or by any movement that may be impressed upon the spine.

5th. *Disease of the pelvic bones* may of course occur independently of any affection of the sacro-iliac articulation, and when so occurring, it always commences at a distance from it, the crista ilii, the tuber ischii, or the acetabulum, being the usual seat of the disease. When occurring in the first of these two situations, the resulting abscess seldom attains a very large size, and is altogether above or below the synchondrosis, the outline of which can be felt clear and unobscured by swelling of any kind. When the abscesses are opened, the sinuses that result will lead directly down to the rough and carious bone, examination of which will leave no doubt as to the nature of the cases. In these cases, also, no change takes place in the length of the limb, or in the position of the side of the ilium.

When the acetabulum is primarily affected, the difficulty of diagnosis may be greater, in consequence of the large size and often infra-pelvic nature of the abscesses, and the coexistence of a certain amount of displacement or elongation of the limb. But here the same circumstances that enable the surgeon to effect a diagnosis in ordinary coxalgia—viz., the pain in movement influencing the hip-joint merely, and the increased length of limb, as determined on measuring from the anterior superior spines—will prevent his falling into error as to the true nature of this disease.—*Ranking's Abstract*, No. 29, 1859.

3. REPORT OF A CASE OF EXTIRPATION OF THE TONGUE. By *Alexander Fiddes F.R.C.S.E.*, Kingston, Jamaica.—The tongue, in common with other organs and tissues of the body, is liable to become affected by malignant deposits, producing a form of disease as ill to suffer and as surely fatal as any other affliction of humanity; for whether the morbid action appear on the surface of the organ as epithelial cancer, or as a circumscribed induration or tumor in its substance, or as a more general infiltration of the texture, little or no benefit is derivable from any kind of local application, or from any plan of constitutional treatment.

The highest surgical authorities agree as to the efficiency of therapeutic measures, in the diseases of the tongue that are truly cancerous; and they also concur regarding the uselessness of removing by the knife, or by ligature, the portion of the organ in which the disease may seem to be confined. Such operations are, indeed, described in several surgical works, as if they were justifiable and warrantable procedures, but they are probably never followed by a permanently beneficial result,; on the contrary, they have been found rather to give an impetus to the morbid action, and to accelerate the fate of the patient.

Mr. Travers considered that carcinoma of the tongue admits only of palliative treatment, and never of operative interference, as in all the cases of partial removal with which he was acquainted, with the exception of one, the disease had returned within a short time; and Sir Benjamin Brodie, in a letter on this subject, speaks in language equally decided and despondent. He says: "There is no great difficulty in removing, either by the knife, or by ligature, any tumor from the tongue, except it be situated just at the back; but then I must tell you that I never saw any permanent good arise from it in any one instance." And in the fourth edition of the *Principles of Surgery*, Mr. Syme observes: "When the cancer is seated on the edge of the tongue, it may be safely cut out with the knife or scissors, after being grasped and forcibly stretched by a hook or hooked forceps. But the result of experience forbids almost any hope of effecting permanent relief by extirpating cancer even of this part, and of course, if possible, still less, when the disease is seated farther back."

It was, doubtless, from a conviction of the uselessness of any partial removal, and of every remedial measure hitherto employed, that Mr. Syme was induced, a short time ago, to propose the excision of the entire organ, and to put it in practice in two cases.* But the result in both instances was unsatisfactory; for the first patient died on the seventh day, the other on the fourth day, after the operation; and in consequence of these failures, this eminent surgeon has interdicted, with his high authority, any further attempts of a similar kind. But, probably, better success might have attended these trials if the patients had come under surgical treatment at an earlier period of the disease, when their constitution had suffered less, and were, in all likelihood, better able to withstand the vital disturbance occasioned by the operation. That extirpation of the tongue will ever be made generally available, or be often warrantable, in cases of malignant degeneration, it would be rash and presumptuous to maintain; but that such a procedure is not necessarily fatal, and that it will sometimes prove adequate to rid the patient of the disease, and perhaps prevent the return of it, is, I think, made evident by the history of the following case. At the time when the subject of it came under my care, I was not in possession of Mr. Syme's report of his cases; for if I had been aware of the conclusion at which he arrived in reference to this proceeding, I would not have been disposed to practice an operation so unfavorably viewed by this great master of modern surgery:—

Fanny M'Cartney, aged thirty-five, consulted me in March, 1858, as to the state of her tongue. There was a sore seated about the centre of the organ, a little to the right of the mesial line; its circumference was about that of a sixpence, and its surface was covered by an ashy-colored viscid secretion; it lay upon and was surrounded by a circumscribed and rather irregular induration, the size of a small French olive, and nearly of that shape. Toward the edge of the tongue, on the same side, and a little farther back, there was a second induration, smaller than the other, and without any ulcerated breach over it. She stated that her attention had been first directed to the sore about six months before, and that she had made use of several applications to it without any beneficial effect. She affirmed that she had not been affected with any venereal complaint, and that she had never been subjected to a mercurial treatment; nor were there any appearances on the skin, or to the throat, to lead to the suspicion of her having ever suffered from either of these deleterious agencies. She considered her health as tolerably good, though her personal appearance was thin, and somewhat indicative of constitutional derangement. She had very little pain or uneasiness in the part, but complained of the tongue feeling rather heavy and benumbed. She was ordered a wash for the mouth, with some alterative medicine and generous diet; and she went to a distant part of the island, to attend to the occupation in which she was engaged. Although, at this time, the character of the sore seemed very suspicious, I did not venture a decided opinion regarding it, but requested the patient to return, in the event of its not improving or getting worse. She came back to me in the beginning of August, considerably fallen off in health, and the sore presenting still more unequivocal indications of a malignant disposition; the pain, in particular, which was absent at first, had now become troublesome; it was of a lancinating or shooting character, extending toward the ear, and in the direction of the angle of the jaw; but the glands of the neck were unaffected, and the tongue was in nowise fixed or adherent to the floor or sides of the mouth, nor was the posterior part of the organ, so far as could be ascertained by examination, implicated by the disease. Considering the case to be a favorable one for complete excision, I submitted the patient to the inspection of several of my professional brethren in the city, and she was also examined by Dr. Lawson, Inspector of Her Majesty's Army in the colony; and finding that their opinions were unanimous and confirmatory of my own, as to the malignant nature of the disease, I had no hesitation in advising the removal of it. To this the patient consented; and on the 2d of September I performed an operation, the steps of which were as follows:—

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* Vide Lancet, August 14, 1858.

Operation.—The patient was seated in an arm-chair, and the body secured to it by a sheet passed around. Chloroform having been administered, one of the lower central incisor teeth was extracted, and the lip divided in the mesial line to the lower margin of the chin; here several small vessels spouted from the cut surfaces, requiring ligatures, and by the time they were all secured, the effect of the chloroform had passed away. It was therefore re-administered; and as soon as she was brought fully under its influence, the jaw was sawn through at its symphysis, and the two halves held asunder by two assistants. Then grasping the tongue firmly with a vulsellum, it was held and stretched forward and upward by a third assistant, while I introduced two fingers of the left hand beneath it, and dissected it away from the floor of the mouth by a strong, blunt-pointed and slightly curved scissors, leaning the instrument on the fingers as I proceeded, and feeling with them what way was made in the separation of the parts. The line of dissection was carried a little obliquely, so that I divided the left lingual artery before cutting the right; and as soon as these vessels were tied, the dissection of the organ was proceeded with, as far as its attachment to the hyoid bone. Then taking a straight, sharp-pointed bistoury, I pushed its point through the firm fibro-cellular texture, constituting the root or osseous connection of the organ, at the same time feeling for, and meeting the point of the instrument with the end of the left forefinger, which had been passed over the upper surface of the tongue, and placed within the concavity of the *os hyoïdes*, in front of the epiglottis. Through the perforation thus made, I then passed a straight, blunt-pointed knife, and keeping the blade closely applied to the bone, and guiding it with the left forefinger, I separated the parts completely from their osseous insertion, and finally, divided the two lateral folds of mucous membrane connecting the tongue to the palate. As soon as the detachment was effected, two small vessels, lying in close proximity to the hyoid bone, bled and required tying; but there was no further hemorrhage from any part of the mouth.

The extirpation having been thus accomplished, the two halves of the maxillary bone were put together, and retained in apposition by a fine silver wire passed between the teeth. The lip was closed by sutures, and a bandage applied to support the jaw. In the latter stage of the operation, the action of chloroform could not be maintained, yet the patient bore the whole procedure remarkably well, and evinced very little vital shock or depression at its close. After her removal to bed, ice was applied around the jaw, and small pieces of it were from time to time placed within the mouth. Late in the evening it seemed necessary to supply some nourishment; and with this view, a flexible catheter was passed along the floor of the nostril; but as soon as the end of the instrument dipped into the pharynx, a paroxysm of irritation and cough was excited, which brought on some bleeding from the mouth, and obliged me to withdraw the tube. The bleeding was controlled by the application of ice; but I made no further attempt to give nourishment in this manner, but allowed her to take it in her own way from the spout of a small teapot. From this time the patient progressed favorably, taking nourishment in sufficient quantity, and sleeping very well at night, with the assistance of an opiate occasionally, but generally without it.

Subsequent history.—The wound gave but little trouble; the incision in the lip healed by the first intention; the ligatures in the mouth came duly away; and the raw surfaces granulated and healed. The only treatment required was the application of a bandage to support the jaw, and a chlorine wash to cleanse the mouth. It was rather more than two months, however, before the bone was firmly consolidated by osseous union; and somewhat later, three small scales of bone successively exfoliated from the chin; but with the exception of that annoyance, and some degree of salivation, which was rather troublesome at first, no untoward circumstance occurred to retard convalescence. Fully seven months have now elapsed since the operation, and the mouth continues perfectly sound; while there has been a progressive improvement in the health, in respect to which, the patient's present state contrasts very favorably with her former condition. The power of deglutition is now so little impaired, that she can swallow solid articles of food nearly as well as fluids; the sense of taste is blunted, but not abolished; and the faculty of speech, though considerably weakened, is still sufficiently preserved to enable her to engage in conversation,—her voice, though low, being distinctly audible to persons near her.

Whether the beneficial result thus obtained is to continue as a permanent cure, or prove only a temporary respite, may be still questionable; but a similar uncertainty always attends operations for cancer on other parts of the body; and whether this complaint is to reappear, after excision. in any given case, must be always more or less problematical. In the present instance, the operation has been successful so far; and whether malignant action show itself at some future period, or remain permanently absent, I shall, in either case, be disposed to think that operative interference was not unjustifiable or improper. No doubt, in a majority of the cases in which malignant action manifests itself in the tongue, no operative interference can be admissible; nevertheless, in those instances where the disease has not invaded the surrounding parts, but is limited, circumscribed, and confined within the tongue itself, it is probable that the excision of the whole organ may eradicate the local affection, and afford the patient a fair chance of escape from a very painful and miserable death. But as the operation is not only severe to the patient, but likewise rather formidable to those engaging in its execution, it should not be undertaken except by a surgeon who is conversant with operative practice, and can command the services of an assistant on whose manual dexterity he can rely. But a good deal of the pain and shock may be averted by chloroform, and the hemorrhage need not be great,—the only arteries of consequence that come in the way being the two lingual trunks, and they may be readily seized and secured; for the section of the maxillary bone opens up the mouth thoroughly, affords free access to the throat, and enables the operator to command any bleeding that can possibly arise. It is important, however, to secure one lingual artery before dividing the other, and not to cut both at the same time, as a simultaneous bleeding from the two sources might rapidly fill the mouth, obscure the view of the wound, and cause embarrassment in the application of the ligatures; but this contingency may be certainly avoided by carrying the dissection on one side of the organ a little in advance of that of the other.—(*Edinburgh Med. Journal*, June, 1859.)

4. DIVISION OF THE POPLITEAL NERVE FOR NEURALGIA IN THE LEG. By *E. M. C. Hooker, Esq., M.R.C.S.*, Hadlow.—Jane B., aged twenty-five, has suffered for the last ten years from the most excruciating pain in the left leg. The pain has been attended with atrophy of the muscles of the limb and ulceration, said to be peculiar to disease of the sensitive nerves. To obtain relief from this most miserable condition, she has three times been an inmate of the Maidstone Infirmary, once of St. Thomas's Hospital, once of St. George's Hospital, once of St. Bartholomew's Hospital, twice of Margate Infirmary, and three times of King's College Hospital, where she has had the tibia gouged in all directions; still no relief. The constant pain and almost entire loss of sleep, at last began to tell seriously on her strength; death seemed to be looming at no great distance. Although amputation had been most earnestly requested by the patient, none of the eminent surgeons under whose care she had been, considered it advisable to accede to her desire.

The only method of obtaining relief seemed to me to be section of the popliteal nerve. After consulting with my partner, Mr. G. Vine, I determined to cut down on and divide the nerve as high as one could conveniently do so. Accordingly, on the 24th of June, the patient being under the influence of chloroform, I traced the edges of the ham-string muscles from below upward, till I reached the point at which they appear to join. I then made an incision in a slightly oblique direction from without inward, carefully cutting until I reached the edge of the biceps; then the director was freely used, and in a few seconds the nerve was thoroughly exposed and cut. The edges of the wound were then brought together by sutures and adhesive plaster.

The following day the pain seemed to be as bad as ever; and although pain experienced in any locality does not always entirely cease on section of the nerve, yet I much feared that the disease existed beyond the reach of the knife. However, the pain decreased every day, and the ulcerations on the leg began to heal immediately, and have now for some weeks disappeared. She has not suffered from any pain in the limb for more than eleven weeks. Her general health has in the mean time greatly improved; and her countenance, as might be inferred, has entirely altered its character.

I may mention a somewhat curious fact connected with this case—namely, that although the limb, before section of the nerve, was most sensitive to the prick of a needle, yet that a galvanic current of considerable strength, and applied in every conceivable direction, had not the slightest effect on it.

It is hoped that a mechanical contrivance now in the course of construction will enable this patient to dispense with crutches, upon the aid of which she has been for some years dependent.—(*London Lancet*, Oct. 1st, 1859.)

5. Case of Spina Bifida treated by Collodion. By *Dr. Behrend.*—A strong healthy child was brought to Dr. Behrend when seven weeks old, having a swelling over the last lumbar vertebra and the upper part of the sacrum. It was the size of a small orange, of a roundish form with a broad base, and disappeared under pressure of the finger. The skin over it was very delicate, transparent, and of a palish red. Pressure which caused the disappearance of the fluid seemed to give the child pain, and induced distortion of the features, which disappeared when this was removed. The aperture in the vertebra could be distinctly felt. The author resolved to try the effect of compression by collodion; and in order that its action should not be too suddenly energetic, he mixed it with some castor-oil in the proportion of three parts to six of collodion. On July 2 the whole of the surface of the tumor and some distance beyond were painted with this. No bandage was applied, and the parts were left freely exposed to the air for an hour and a half, a firm but yet soft and yielding covering having formed over the tumor. Some wadding and sticking-plaster were now applied. Next day some amount of contraction was thought to have taken place, and a penciling with eight parts of collodion to two of castor-oil was performed. By the 7th of July a remarkable degree of contraction of the tumor had taken place, and it was painted with pure collodion. On the 8th there was a slight rupture observed in the shriveled wall of the tumor, and some moisture issued; but on close examination it was believed that the rupture only impli-

cated the layer of the collodion, and did not penetrate within the tumor. This had now diminished to the size of a filbert, and became much flattened. A small plate of caoutchouc, wrapped in muslin, was laid over it and kept on by a roller. This was kept on for three weeks, when nothing else was visible than the thick skin, stretched tightly over the aperture in the spine, and from which the collodion had long since become separated. The plate was directed to be worn some time longer yet, and the child, when seen, (October 12,) seemed well and hearty, and fully developed—the large fontanelle, which had been too open, having become diminished in size. No trace of the tumor was visible, some thickened skin and a subcutaneous mass of almost cartilaginous hardness supplying its place, allowing the edges of the bony aperture only to be imperfectly felt. The author thinks that probably the collodion might have been used at once without the castor-oil, when its influence would have been more powerful; and he suggests, under certain circumstances, the combination of lead or tannin with it, in order to produce a more immediate effect on the wall of the tumor. In the present case he considers that some calomel, which, together with cold applications to the head, were employed on account of a head affection which threatened to come on during the treatment, may have contributed to the rapid absorption of the fluid.—(*Journal für Kinderkr.*, Band xxxi., p. 400; *Medical Times and Gazette*, July 2, 1859.)

6. ON FOREIGN BODIES IN THE URETHRA AND BLADDER. By *Professor Pitha.* (Wien Medizin. Wochenschr., 1858, Nos. 50, 51, 52.)—The immediate cause of this communication was an interesting case, in which, on account of the introduction of foreign bodies into the bladder, the operations of lithotomy and lithotrity were successively performed on the same individual. He was a soldier, aged thirty-four, who came into the hospital in consequence of a piece of lead-pencil, about three inches long, and pointed at either end, having slipped into the bladder while he was trying to pass it, as a substitute for a bougie. He had suffered excessive torment for a week, and the pencil (which was found divided into two parts) was removed by the lateral incision. He did very well. In two years he returned to the clinic, suffering from intense cystisis, brought on from the presence of a piece of sealing-wax which had entered the bladder during his manipulation with it. The patient protested against the repetition of lithotomy, which, indeed, would have hardly been advisable in the inflamed condition of the bladder, and it was resolved to have recourse to lithotripsy. He was brought under the influence of chloroform with great difficulty, and never to an extent sufficient to subdue the irritability of the bladder, which instantly rejected the smallest quantities of water which were thrown into it. The preliminary injection of the bladder had, therefore, to be dispensed with. The foreign body was seized with the greatest ease, and, not to pursue the details, was crushed and entirely removed in the course of three *séances*, at intervals of two or three days. The patient completely and rapidly recovered. This case is very interesting, from the fact of there being no means of anticipating the amount of resistance which wax that had lain in the bladder for four weeks would offer; and further, by showing that lithotripsy may be safely performed, notwithstanding violent general reaction and the greatest irritation of the bladder, producing complete

intolerance of the presence of any water whatever. Hitherto one of the most received axioms has been, not to undertake the operation in an empty bladder. It may surprise some that the narcosis was not pushed to the extent of appeasing this irritability of the bladder, but repeated experience has shown that the highest doses of anæsthetic agents will not effect this.

The case is also interesting as exhibiting an example of the unexpected slipping of foreign bodies into the bladder having occurred twice in the same individual. This accident has not excited the attention its frequency and importance demands. If experience upon this point were collected, surprise would be excited at the extraordinary character of various objects found in the urethra and bladder,* of some of which it would be difficult to explain how they could be forced through the urethra, to say nothing of their slipping into the bladder. But even with respect to the commoner objects, most of which have some resemblance in shape or size to the catheter, such as pen-holders, pencils, glass tubes, metallic rods, pieces of wood, etc., one can scarcely conceive how, once introduced into the urethra, they should escape from the fingers and slip into the bladder. This may be intelligible enough as regards the straight, short, female urethra, but not so as to the male urethra, whose long curved canal is traversed with difficulty by a well-oiled catheter in inexpert hands. Some have sought for an explanation in a suction-action or a peristaltic movement of the urethra, but ample experience in introducing instruments does not favor this view. On the contrary, a powerful expelling influence is often exerted by the urethra, the instrument being forcibly ejected when it has reached the neck of the bladder, this resistance being in fact met with, more or less, in the widest urethræ. The walls of the canal are naturally closely applied to each other, and its entire mechanism is directed so as to favor the passage from within outward, and not the reverse of this. Demarquay has furnished this natural explanation, that the entrance of the body takes place at the period of erection, and especially of ejaculation. The urethra is then elongated, its walls are expanded and smooth, and its canal is gaping and well lubricated, while its curvatures are diminished. The penis in relaxing forces the body deeper inward, and the efforts of the person to prevent the occurrence by forcing back the penis, in order to shorten it, only add to the mischief. This seems the most rational explanation, for, in fact, these cases usually occur in onanists, who, in order to induce ejaculation, penetrate deeper and deeper into the urethra, having already blunted the sensibility of the anterior portion. In the performance of catheterism, too, we sometimes find, in spite of the greatest skill, the passage of the instrument is obstructed. Presently, the repeated attempts induce erection, and the instrument at once passes on. Sometimes the catheter glides at once to the membranous portion, where it meets with insurmountable resistance. Believing that there must be a fold or a stricture, or that a faulty direction has been observed, we seek to withdraw the instrument. This, however, is impossible without violence, so fast and immovably is it held; and now a phenomenon which astonishes the inexperienced is observed, viz.: the spontaneous deeper penetration of the instrument, as if propelled by some unseen power, a circumstance which has probably given rise to the suction theory.

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* See a paper by M. Denucé, Brit. and For. Med.-Chir. Rev., vol. xx.

It is, however, a mere mechanical effect of the elastic return of the penis, (after having been forcibly drawn forward,) during which the muscular walls, closely embracing the instrument, are also carried backward. So strong may this spasmodic action of the muscles be, that nothing but rude force will overcome it, unless we wait for minutes or hours, until the spasm subsides. It may play the chief part where foreign bodies slip into the bladder during erection, at all events detaining them in the membranous portion of the urethra; and it will be the more certainly brought into action the more pointed and irritating the body be, especially as the state of erection increases the irritability of the urethra. It is well known that catheterism after coitus or pollution is much more difficult, and that in such case a seizure of the instrument most readily takes place, even in patients accustomed to the operation—a fact of some importance in the treatment of stricture.

For the removal of foreign bodies of a roundish shape from the urethra, such as beads, beans, calculi, etc., Professor Pitha has long been in the habit of using delicate long-bladed forceps, (*Kornzange*,) which can be easily manœuvred with one hand, while the fingers of the other fix the foreign body from behind. Several such forceps, of different lengths and widths, should be at hand, in order to choose from in particular cases. When the body is seated very deeply, as at the neck of the bladder, the instrument should have a gentle catheter-like curvature given to it; and such an instrument the author finds admirably adapted for the removal of fragments from the urethra after lithotrity. When the foreign bodies are too voluminous, they should be first broken up by means of Segalas' urethral *brise-pierre*, and when not capable of being broken, they must be removed by the button-hole operation, the wound in these cases always readily healing, even when situated in the perineum. In the case of sharp, pointed bodies, such as needles, awls and the like, special manipulation is required. When a needle is in the region of the penis, we must ascertain by touch its exact position, and then, by pressure on the blunt end, force the point through the walls of the urethra, until it can be seized by a forceps. Pins should be thrust through in the same manner, and so manœuvred that the head is directed toward the mouth of the urethra, and then removed by an urethral forceps. When the needle is implanted lower down in the urethra, we must act in the same manner with the fingers placed in the rectum. In bodies having yielding stems and blunt points, such as hair-pins, these procedures are impossible, and for the removal of such, an instrument contrived by Matthieu, of Paris, answers admirably. Leroy has modified the instrument, so that it now resembles the *brise-pierre à pignon*. Smooth, cylindrical bodies, such as needle-cases, pen-holders, bougies, etc., soon pass into the bladder. Before this they may usually be removed with ease, providing their progress backward be at once prevented by compression. Even if the body has reached the membranous portion of the urethra, it can be removed by pressing it forward through the rectum, while the curve of the urethra is diminished by traction of the penis. The cases wherein an instrument breaks in the urethra may be easily managed in this way with patience and presence of mind.

When the foreign bodies have reached the bladder, they are extracted with greater difficulty the longer and thinner they are. After they have remained in the bladder, too, they become incrusted, and are more difficult of removal, especially when the bladder has been rendered irritable. It is a matter of great difficulty to seize them in the longitudinal direction, but the extractor of Luer is admirably adapted for regulating the direction in which the body shall be removed, and with its aid our difficulties are reduced in these cases to the discovery of the foreign body.—(*British and Foreign Medico-Chirurgical Review*, No. 47, July, 1859.)

PRACTICE OF MEDICINE.

1. Cases of Chorea treated by Sulphate of Zinc. By *William H. Stone, M.B.*, Oxon., *L.R.C.P.*—Fifty-four cases of chorea were admitted into St. Thomas's Hospital during the year 1858. From the similarity of conditions under which they occurred, they offer a fair opportunity for comparing different methods of treatment. They have accordingly been collected with some more detail than could be attempted in the registrar's statistical report; while, on the other hand, no attempt has been made to give the whole clinical history. Only so much has been preserved as may show the general type and causation of the disorder in the several cases, and tend to establish the efficacy of various medication.

Out of the whole number, fifty were put under the influence of three principal remedies, either singly or consecutively. In sixteen of these, the treatment mainly comprised the exhibition of sulphate of zinc; in twenty, of arsenite of potash; in fourteen, of ferruginous preparations. The remaining four cases have some exceptional modification. It is proposed in this communication to analyze briefly the group of cases treated by sulphate of zinc, and to compare them with the results obtained by other methods:—

Case 1.—M. D., aged sixteen, female servant. Catamenia regular and somewhat profuse. In other respects health good. Nine weeks before, after a fall, began to suffer from chorea, for which she was out-patient at Guy's Hospital. On admission, not a very severe case; speech and swallowing unaffected; some constipation and headache; aspect anæmic. Never had rheumatism. Took zinci sulph. gr. ij. t. d. for seven days; gr. iv. for seven days, but without much improvement. There was then some spinal tenderness, and a blister was made with liq. vesicatorius over the tender spot, with advantage. She then began to take ferri ammon. citr. gr. x. t. d., and a few days later a daily shower-bath. Under this treatment she rapidly improved, and on the twenty-sixth day of its administration was presented cured, having been in the hospital altogether forty-two days.

Case 2.—T. F , aged fourteen, a female, at home. Chorea one month, entirely limited to right side of body; no cause known; suffers much from headache. Some evidence of commencing menstruation, but no complete establishment of the function. Appetite and digestion good; no difficulty of swallowing; speech had been affected at first, but was not so on admission. No history of rheumatism; no cardiac symptoms. Took zinci sulph. gr. ij. t. d. for three days; then gr. iv. for fifty-three days. Occasional purgatives, and a shower-bath daily. Made a slow, but steady recovery in fifty-six days.

Case 3.—M. L. D., aged eleven, female, at home. Always a feeble child. Two months previously had some sort of febrile attack, with engorged glands in neck, and herpetic eruptions round the mouth. On recovering from this, was remarked to have choreic symptoms. These had been but slight until five days before admission; they then increased so much as to cause her to fall down, and to interfere much with articulation. Never had rheumatism. On admission she complained principally of weakness and vertigo; no headache; tongue spasmodically thrust out, and speech difficult, but no dysphagia. No cardiac symptoms; no digestive disturbance.

Took zinci sulph. gr. ij. t. d., in infusion of valerian for seven days. The dose was then increased to gr. iij. for three days, then to gr. v. for seven days, then to gr. vj. for eleven days. With this were ordered shower-baths on alternate days, and occasional purges. She made some improvement, but at the end of twenty-eight days was far from cured. She was then ordered liq. arsenicalis ♏ij. t. d., c. decoct. cinchonæ, under which treatment the improvement increased rapidly, and after taking this for thirty days, she was presented cured, having been in the hospital altogether sixty days.

Case 4.—H. C., aged eleven, male, at home. A very slight case; no assignable cause; general aspect and functions tolerably healthy; had been ill three weeks. Took zinci sulph. gr. ij. t. d. ex infus. valerianæ for seven days, increased to gr. iv. for two days; but as this quantity caused some sickness, it was again reduced to gr. iij., which was taken for twenty-two days, with steady improvement. He went out cured at the end of thirty-one days. Besides the zinc, a daily shower-bath was given, and occasional purgatives.

Case 5.—G. C., aged twelve, male, at home. Five weeks previously had been in Guy's Hospital, under Dr. Owen Rees, with rheumatic fever. There had been no cardiac symptoms or treatment. He left the hospital pretty well fourteen days previously, and choreic symptoms came on about a week before admission into St. Thomas's. There was no fright or other cause. On coming in there was some dysphagia, much difficulty in speech, rapid and spasmodic protrusion of tongue. He complained of no pain, but was kept awake at night by the movements. These increased somewhat at first, and were accompanied by stupor and drowsiness. A fortnight later the spinal muscles became firmly contracted, so as to lift him from the bed, and there was then, for the first time, spinal tenderness in the interscapular region. This subsequently became very marked at the lower part of the lumbar region. A week later the choreic symptoms abated slightly; but tenderness became marked in the cardiac region, with much anxiety of aspect, and a to-and-fro sound was audible over the same spot. Pulse 136, large, but compressible; cough becoming troublesome. Soon afterwards inability to lie on the left side, with short breath, set in, the heart's action having become irregular.

Six weeks after admission the chorea was almost gone. Pulse 132, regular. From this time he improved rapidly, though exceedingly anæmic. There remained, however, some thickening and tenderness about many of the larger joints.

At the end of three months he was able to go out, in tolerable health, but with a persistent systolic mitral murmur, and increased impulse over the cardiac region.

On first admission, he took zinci sulph. gr. ij. t. d. for ten days; then gr. iij. for fourteen days; then gr. iv. for fourteen days. At this time spinal tenderness was treated by a blister over the spot, and the syrup ferri iod. was given in ℥ss. doses thrice a day. With this he improved in nervous symptoms, but the heart became affected. After taking the syrup for twenty-five days, the compound iron pill was substituted for eight days, and a mixture of quinine and iron for the three weeks before his going out. He was altogether fifty-six days under treatment. This patient returned to the hospital a few weeks later with symptoms of cardiac disease, of which he died. On post-mortem, extensive cardiac mischief, principally involving the mitral valve, was found. The spine exhibited no morbid appearances.

Case 6.—E. H., aged sixteen, female, at home. Catamenia had appeared more than two years before, and had been fully established above a year. Had suffered from slight choreic symptoms rather over twelve months. They began in the head and neck, but had never been very severe. No cause could be assigned for the attack; speech, swallowing, and protrusion of tongue were normal; general aspect anæmic; no rheumatism or cardiac disease. The sulphate of zinc gr. ij. t. d. ex infus. valerianæ was given for seven days, then gr. iij. for seven days, then gr. iv. for thirty-eight days. Tepid shower-bath on alternate days; and latterly aloetic purges were added from menstrual insufficiency with constipation. Under this treatment she steadily improved, and was presented, after fifty-two days, in a fair way of recovery, though not quite cured.

Case 7.—A. W., aged twelve, female. A feeble child; no appearance of catamenia; always nervous, and easily frightened; never had rheumatism; four days before admission frightened by "a ghost;" fell down and had spasmodic movements of the right side of the body. They had somewhat increased, but were not very severe on admission. The bowels were confined; tongue foul; much nausea and retching, but no worms known of; latterly had been subject to short breath, and palpitation on slight exertion. At these times the cardiac action was excessive, but without definite murmur. She took zinci sulph. gr. ij. ter die, ex infus. valerianæ for seven days, with shower-bath daily, and occasional purges. But it caused so much disturbance of the stomach, already irritable, that it was exchanged for the liq. arsenicalis ♏ iij. ter die c. decoc. cinchona, with free purgation. This was taken for fifteen days with ease, and rapid amendment. She went out cured after twenty-five days.

Case 8.—S. A., aged twelve, female. A second attack. The first had been slight; this was rather severe. It dated from a fright three weeks previously. No great affection of speech, more of swallowing. Tongue steadily protruded. General health good. Never had rheumatism. Took zinci sulph. gr. ij. t. d., ex inf. valerianæ for three days; then gr. iv. for twelve days, with daily shower-bath. Recovered rapidly. Presented in fourteen days nearly cured, though still some movement.

Case 9.—A. P., aged eleven, female. Third attack. The first occurred one year, the second five months, previously. Had been ill this time one month. The right side was principally affected. No dysphagia or difficulty of speech;

tongue steady; general aspect healthy; bowels regular; appetite good; heart normal; never had rheumatism. She took zinci sulph. gr. ij. ex infus. calumbæ ℥j. t. d. for four days; then gr. iv. for twenty days, with daily shower-bath. Presented cured on the twenty-fourth day. When in the hospital five months previously she had been treated by syrup. ferri iod. ʒss. t. d. for thirty-one days, and went out cured on the thirty-second day.

Case 10.—R. H., aged eight, male. Received a "thrashing" from his father for letting fall some article, and immediately afterwards suffered from choreic spasm. Was unable to say whether a spasm caused him to drop the vessel. This occurred four months previously. The attack had not been very severe, most so on the right side. Speech, sleep, and swallowing were unaffected. The tongue was protruded fairly. General health good. Never had rheumatism or cardiac symptoms. Some flying pains, apparently of a neuralgic character. Took zinci sulph. gr. ij. ex infus. valerianæ ℥iss. t. d. for seven days, and gr. iv. for twenty-two days, with daily shower-bath. Improved steadily. Presented cured on the twenty-ninth day.

Case 11.—H. C., aged eleven, female, at school. Had been ill three weeks previously, and had partially recovered. Ten days back had again become worse. It was stated that the illness consisted of pains and swelling in the feet and arms, with tenderness, the child being at the same time feverish and out of sorts. It was not considered as rheumatism, and had no medical attention. Ten days before admission, the febrile symptoms recurred, with pain in all the limbs. Choreic movements were first noticed in the left side four days before, and had interrupted the sleep at night. They may have been caused by a fright which she seems to have had on that day. When seen, the child was sensible and intelligent. The movements were active and constant. Speech was slightly affected, but the tongue was fairly protruded. Swallowing was not interfered with. There was no evidence of other disease. She took zinci sulph. gr. ij. ter die, ex infus. valer. for five days. The dose was then increased to gr. iv., and this was taken for twenty-one days, with some amendment, At the end of this time she was given a daily shower-bath and liq. arsenicalis ♏iv. ter die. This she took for six days, at the end of which she was presented cured, having been thirty-three days in hospital.

Case 12.—D. R., aged fourteen, male. Had had chorea two months; no previous attack; never had rheumatism. No cause assigned for the attack. On admission, the movements were extensive, involving many muscles of the trunk; he could, however, walk. Speech was indistinct, the tongue protruded rapidly, and swallowing difficult. As this proved a very obstinate case, a variety of treatment was employed. The sulphate of zinc was given in doses of gr. j. ter die, with inf. valerianæ. After four days the dose was increased to gr. ij.; again, after three days, to gr. iij.; again, after four days, to gr. iv., which dose was taken for three days. As there seemed little or no improvement, the ferri carb. saccharatum gr. x. t. d. was ordered; after four days increased to gr. xv; again, after a week, to gr. xx.; and after a like period to gr. xxv. After three days this was raised to ʒss., which was taken for four days. There was then very little, if any amendment, though the general health was not materially impaired. The liq. potassæ arsenitis ♏iij. bis die was then ordered, with aperients on alternate nights Tepid shower-baths were also given twice a week. This medicine producing no effect after fourteen days, the ferri carb. saccharatum gr. xx. t. d. was again given for fourteen days, followed by a repetition of the arsenic in the same form for seventeen days. The effect of opiates was then tried. Morphiæ hydrochl. gr. 1-6th omni nocte, increased regularly to gr. 1-3d for eleven consecutive nights, but without much effect. The morphia was then administered in the form of gr. 1-6th omni manè, with only partial success. The patient had now been in hospital from December 31 to April 10 without very great improvement. At this date, however, the ferri carb. saccharatum was resumed in addition to the opiate in the last form, and increased regularly during the month from gr. x. ter die to ʒss. ter die. The choreic symptoms at length began to give way, and on May 1 he was presented cured, having been 123 days under treatment.

Case 13.—M. F., aged ten, female, at home. Had recently had measles, from which she was only partially recovered. Ten days previously began to suffer from chorea. Never had rheumatism. No previous attack. Not a very severe case; swallowing unaffected, speech very slightly so; tongue protruded rather rapidly. After free purgation took zinci sulph. gr. j. ter die ex inf. valerianæ for three days; gr. ij. for four days; gr. iij. for three days; gr. iv. for four days. She was then removed from the hospital while in a fair way of recovery, having been under treatment sixteen days.

Case 14.—J. B., aged ten, female. Not much history, except that she was a delicate and passionate child, and had had chorea about a fortnight. There was constant motion of both trunk and extremities, but the case was not very severe. Tongue hastily protruded. At first took zinci sulph. gr. j. ex inf. valerianæ ter die for three days; then gr. ij. for four days; then gr. iij. for four days with some advantage. But thirteen days after admission she was attacked with varicella, which run its usual course, and was followed by some impetiginous irritation of the skin. These did not prevent steady recovery from the choreic symptoms. She was presented cured on the forty-ninth day.

Case 15.—S. L., aged ten, female. Had been ill four months with chorea following a fright. Had never had rheumatism. Heart normal; the symptoms were not very severe; could walk perfectly; speech and swallowing unaffected; tongue fairly protruded; bowels rather costive. At first was freely purged. Then took zinci sulph. gr. j. t. d. for three days; gr. ij. for four days; gr. ij. for seven days; gr. iv. for three days. During this time there was no great improvement. She was then ordered the ferri carb. saccharatum gr. x. ter die. This she took for four days. It was then increased to gr. xv. with the shower-bath daily; continued for seven days. Then increased again to gr. xx. which was taken for fourteen days. With this there was some amendment. She was then given vin. ferri ʒj. and ol. morrhuæ ʒj. bis die. With this she made a recovery, and was presented on the sixty-fifth day cured.

Case 16.—J. E. P., aged eleven, male. Chorea a fortnight; not very severe; no previous attack; had rheumatic fever some time before. No cardiac affection; speech and swallowing unaffected; tongue fairly protruded. At first had only cold shower-baths daily for eight days. Then took liq. potassæ arsenitis ♏v. ter die for eleven days, and had a blister on the nape of the neck. With this there was some improvement. The zinci sulph. gr. ij. ter die was then given for seven days with great improvement. It was increased to gr. iij. for three days, and to gr. iv. for ten days, by which time the cure was effected. Discharged after being in hospital thirty-nine days.

Of the sixteen cases described above, five were males, eleven females. The ages of all are intermediate between eight and sixteen years. Previous attacks had occurred in two cases only. Duration of previous illness had been one week in two cases; two weeks in three; three weeks in three; a month in two; two months in two; three months in one; four months in two, and a year in one case. The attacks were without known cause in four instances, from fright in four, from a fall in one, and followed previous illness in five cases. This illness was in one instance of febrile character, probably scarlatina; in another measles, and in three others acute rheumatism; of these latter cases one also suffered from cardiac disease, ultimately terminating in death. Two other cases, though not absolutely complicated with illness, showed evidence of being connected with commencing menstruation in a feeble habit. One case was attacked with varicella soon after admission.

As a general statement few of the above cases were characterized by great severity, and of these, one, Case 12, which warrants such a description, was more remarkable for its obstinacy than for the acuteness of the symptoms. Accordingly, the graver disturbances of function are comparatively infrequent. Interference with articulate speech was only observed in six of the cases; dysphagia, to an extent beyond what would naturally follow from spasmodic contortions of the face and hands, only in one case. The rapid and spasmodic protrusion of the tongue, to which much attention has been drawn as a symptom of chorea, was observed in five cases. They formed the bulk of those which have already been mentioned for imperfection of speech. The one remaining case had recovered considerably from this latter symptom before admission, and it is probable that, at an earlier period, spasm of the tongue might also have been substantiated. Distinct spinal tenderness was only found in four cases.

Sulphate of zinc was alone exhibited in eight cases. Of these, five were cured; three were improved, though not cured. It was in all cases administered in increasing doses, beginning with one or two grains. Six grains was the highest dose given in the cases before us, though in others four times this amount has been exhibited with advantage, and without vomiting. The shortest effective administration was of twenty-four days duration among the cured cases; the longest of fifty-six days. The average period of continuing the medicine was twenty-nine days for all the cases; two of which were removed before its full influence had been produced, and one was interrupted by an attack of varicella. In four cases the sulphate of zinc was followed by ferruginous preparations. One of these, Case 5, complicated by rheumatism and cardiac disease, must be regarded as an exception. In the other three, Cases 1, 12, and 15, the remedy must be considered to have failed, or only to have succeeded partially; they were all ultimately cured under the administration of iron.

In four cases, the zinc was followed by a course of liq. arsenicalis. In three of these, Cases 3, 7, and 11, this effected a cure; but in the other, Case 12, it was equally ineffectual with the zinc, and recovery took place under the iron treatment. In Case 16, on the other hand, the liq. arsenicalis was exhibited for eleven days in doses of ♏v. ter die, without much effect, and recovery took place after the administration of sulphate of zinc for nineteen days in doses of gr. iij. ter die. In two cases, 5 and 13, opiates formed part of the treatment. The former of these required their use principally from rheumatic and cardiac complication; in the latter they seem to have had a beneficial effect; inasmuch as recovery took place under their use combined with iron, though the disease had previously resisted both remedies when exhibited singly.

Besides the principal remedy, thirteen cases had the cold or tepid shower-bath during the treatment. Of the three not so treated, one was confined to bed with subacute rheumatism and cardiac symptoms; the second had only recently recovered from an attack of measles; the third had varicella soon after admission. It is not possible to give any separate estimate of the value of this application in bringing about the cure, though it cannot but be ranked very high. It may be omitted as an element of comparison, from its employment in all cases which did not exhibit a distinct counter-indication.

The general statistics are as follows: Of 16 cases treated with sulphate of zinc, 13 went out cured, 3 relieved; but 2 of the latter were in a fair way of recovery, and may probably be set to the credit of the medicament. On the other hand, three of those ultimately cured owed their improvement partly to ferruginous preparations; and in one case the zinc had no effect whatever. It may, then, be stated generally, that advantage was derived from the zinc in 14 out of 16 cases. The longest stay in the hospital among these cases was 123 days; the shortest 14; the average stay, 44·6 days.

Fourteen cases were treated during the same period with preparations of iron; all were cured. The longest stay in hospital was 161 days; the shortest 6 days; average stay, 44·2 days.

Twenty cases were treated with liq. potassæ arsenitis: 18 cured; 1 relieved; 1 died. The longest stay in hospital was 55 days; the shortest 6; average stay, 26·3 days. Average stay in hospital of the 50 cases submitted to three principal remedies, 37·2 days; average stay of all the 54 cases, 35·4 days.

The results of this analysis are somewhat remarkable, as failing to confirm the usual estimate of the value of sulphate of zinc in this disorder. The iron seems to act more certainly, and the arsenic both more certainly and more rapidly than the zinc. The average duration of treatment both with iron and zinc, 44·2 days and 44·6 days respectively, is very similar, and both are above the general average of the whole number of cases, namely 35·4 days; whereas the average stay of the arsenic cases falls as low as 26·3 days. This difference is the more remarkable, as the character of the cases submitted to the arsenical treatment rather exceeded in severity that of the others; and, indeed, the only death recorded belonged to this division.

It remains a question whether the discrepancy between these results and those of some previous well-conducted observations is due to mere accident, or to real difference in type between cases originating at different times and under dissimilar circumstances.—(*Med. Times and Gazette*, Sept. 17, 1859.)

2. ON THE HYPODERMIC TREATMENT OF DISEASES. By *Charles Hunter, Esq.*, late House Surgeon to St. George's Hospital.—Medicinal substances may be in-

troduced into the cellular tissue beneath the skin with the greatest facility by means of a minute syringe, and so introduced certain medicines will act with extraordinary rapidity, and the most satisfactory result.

To distinguish this plan of injecting beneath the skin from the epidermic and endermic, it would be as well perhaps to use similar phraseology, and call this the hypodermic method.

Dr. Alexander Wood, of Edinburgh, has long employed the introduction of medicines into and under the skin, in the various forms of neuralgia. To him is due the discovery of injecting narcotics into the tender spots of the neuralgic part or tissue, whichever it happens to be, the belief of Dr. Wood being that the *localization* of the remedy in the neuralgic part is the cause of the success which attends his practice.

I have tried Dr. Wood's treatment and localization of the narcotic injection to the neuralgic part, and found it productive of considerable relief; as, however, I found frequent repetition of the injection in the same spot productive of abscess, I employed the hypodermic injection of other parts of the body, avoiding localization of the injection; and I have found that the hypodermic injection of the cellular tissue beneath the cutis of any part of the body is quite as striking and as curative in its effects as the injection localized to the neuralgic tissue; moreover, it has these advantages, viz., that inflammation is less likely to follow, and less pain must necessarily accompany the injection of a sound than an unsound or morbidly sensitive part.

In the present communication I wish to draw the attention of the profession to this mode of introducing medicine as applicable in many other affections besides neuralgia.

How often we find that medicine fails to afford sleep to the restless, the highly excitable, the delirious, and the maniacal. In all these cases I have tried the hypodermic injection of narcotics, (often when other measures had been tried and failed,) and in all the effect was immediate, or nearly so, quiet or sleep directly supervening.

My proposition is: That to produce an immediate or decided effect no method is more effectual than the hypodermic injection of the cellular tissue.

In favor of this being the case, (venous injection being set aside on account of its danger,) I will relate some experiments, but must first state the reason the word "narcotic" is inserted in the proposition, is because narcotics are the class of medicines I have always employed in the cases in which I have tried the hypodermic injection, and they are the class of remedies called for generally where an immediate effect is required, either to relieve pain or produce sleep.

The following experiments will show with what rapidity medicines injected into the cellular tissue of the body will act:—

Experiment 1. Injected a few drops of water containing one-twelfth of a grain of the acetate of strychnia into the cellular tissue of a cat; in one minute it was tetanic, and in two minutes it was dead.

Experiment 2. I injected half a grain of morphia in the subcutaneous cellular tissue of a rabbit; it was completely comatose in five minutes, and remained so for hours.

Experiment 3. By the kind request of Dr. Page, I injected half a grain of the acetate of morphia into the arm of a girl aged sixteen, suffering from extreme chorea of all the muscles of the body; in two minutes all the muscles had ceased their irregular movements, and in four minutes the girl was asleep.

Experiment 4 A man suffering from tic douloureux was for some time subjected to the hypodermic treatment; he almost constantly slept in from two to three minutes after the dose was injected at night.

In several cats which I injected with morphia, the first symptoms showed themselves in a very few minutes.

From the following experimental observations on man and animals it will be seen that:—

1. Hypodermic injections act quicker than stomachic doses.
2. That they produce a more powerful, a more effective result.
3. That frequently the hypodermic injection is productive of the greatest benefit, while an equivalent dose administered by the stomach is entirely useless, and even prejudicial.

Experiments 5 *and* 6. I injected three-quarters of a grain of the acetate of morphia into the cellular tissue of a man with *mania a potu.* He got to sleep almost directly, and slept for many hours. I gave the same man the same dose (three-quarters of a grain of morphia) in one ounce of water as a stomachic dose; it was one hour before sleep was produced, which, when obtained, lasted only about one hour and a half.

Experiments 7 *and* 8. I obtained a fine healthy rabbit, and, assisted by Mr. Venning, injected half a grain of morphia in about three drops of water, into the subcutaneous cellular tissue of the animal. It appeared slightly affected in two minutes, and fell comatose, without a stagger, in five. The pulse and respiration were very much lowered at the same time; narcotism lasted in this rabbit from six to seven hours; it appeared perfectly convalescent in nine hours.

Some days after, Mr. Venning present, I again attempted to narcotize the rabbit by the same dose given by the stomach: a gum catheter was used to make certain of the fluid enter the stomach; for a long while we awaited the result, but no narcotism followed; the rabbit never even went to sleep, nor did it bring up the morphia.

Experiment 9. I injected three-quarters of a grain of morphia into the cellular tissue of a cat; it became preternaturally quiet directly after; in seven minutes it gave a convulsive start, its position previously having been fixed and uncomfortable; in thirteen minutes it uttered short sharp cries; muscles of body rigid; eighteen minutes, muscles of extremities become rigid also; the rigidity of the muscles became more marked, until at forty minutes it was in a general tetanic condition, the body fixed, and the legs extended. The cat, contrary to expectation, recovered; but for many hours suffered from the morphia, which appeared to throw the animal into a state of drunkenness, after the muscular rigidity had passed off. Two or three other cats, with a similar dose, I have thrown into a state of strong convulsion, and even of tetanic spasm, by the injected dose of morphia.

Experiment 10. With the aid of Mr. Keal I administered the same dose of morphia to the same cat as in Experiment 9, by the stomach, the gum catheter being passed down the œsophagus. The cat was quite natural for five minutes, then became quiet, and was sick in eight minutes, with five or six spasmodic retchings; it began the purring which morphia causes in all cats in fifteen minutes; at twenty minutes and thirty-five minutes it had one leg convulsed, and in one and a half hours became very excitable and constantly on the move, as if tipsy; this lasted several hours; but it never had the general spasms, or rigidity which the injected dose produced.

Experiment 11. With Mr. Ash, I gave the same cat the same dose by the stomach in the same quantity of water, but this time warm, (instead of cold, as in Experiment 10.) Sickness was again the first well-marked symptom of the action of the morphia; it took place in ten minutes; the succeeding symptoms were as in last experiment, but milder.

As the question might arise whether the sickness in these last two experiments might not have been due to the mechanical irritation of the stomach by the catheter, we made some experiments to set it at rest. We went through the process of injecting, at different times, cold and warm water into the stomach of the same cat, with the cathether; no sickness or irritation of any kind ensued.

Experiment 12. In a patient with hemicrania no narcotic except morphia, injected, will cause sleep. Opium and morphia have repeatedly been tried by the stomach; they never produce sleep, they always cause sickness.

From experiment we may gain much; but far more satisfactory is the proof if it be derived from cases in which the remedy has been called for, tried, and found successful, than from its trial on animals.

Besides such cerebral affections as delirium tremens and mania, in which I mentioned this treatment as producing instant effect and speedy relief, even where large quantities of narcotic medicines had failed by the stomach, there are cases of functional cerebral derangement of the milder form, manifested by wakefulness, continued perhaps for days together, accompanied, it may be or it may not be, by excitability.

I may refer to two cases of this kind in which I have employed this treatment of narcotic injections with marked and immediate effect; and it may be observed that, in both, the administration of narcotics by the stomach *had failed.*

CASE VII. *Continued Wakefulness, with Excitement.*—James H., aged about 40, a man of temperate habits, of a highly nervous temperament, was admitted into St. George's Hospital, in December last, under the care of Mr. Tatum. He was suffering, on admission, from a gunshot wound of the foot, from which part the bullet was extracted the day he came in, while he was under the influence of chloroform. The wound caused the patient to be in a perpetual worry and anxiety about himself, which at last got to such a pitch that he could get no rest. After two days of wakefulness, during which time he was perpetually talking and getting more excited, and could neither be quieted by morphia, opium, nor hyoscyamus—the opium, on the contrary, causing a little delirum—I injected,* at the request of Mr. Tatum, half a grain of the acetate of morphia into the cellular tissue of the right arm. At the time I injected the morphia, the man was talking in an excited manner, and did not feel the point of the syringe which I quickly thrust beneath his skin; this was at 9.30 A.M.

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* The instrument I employ is the same in construction as the syringe for injecting aneurisms, with a gold nozzle, sharp-pointed and perforated. The makers of this syringe, (which works by a screw, each whole turn of which is equivalent to one minim.) and of a cheaper one, without the screw, but graduated, are Wicker and Blaize, St. James Street.

In *five* minutes he was asleep, and with the exception of a few minutes, about 11.30 P.M., he slept the whole of the night. The benefit this patient received from the injected dose of morphia did not end with the sleep; he was much quieter for the next few days, his appetite returned, and his face lost the flushed and anxious look it before had. The injection was not again required.

CASE VIII. *Wakefulness without Excitement.*—This case was also under Mr. Tatum, in St. George's Hospital. Mary J., aged 35, of a hysterical aspect, was admitted for some subacute affection of the hip. For nights together this woman never slept, (carefully watched by the night nurse,) and morphia, in doses up to three-quarters of a grain by the stomach, produced no effect at all, whereas the same doses injected beneath the skin would cause her to sleep soundly.

From purely cerebral cases I now pass to one in which it seemed the spinal cord was also affected, judging from the constant and violent spasms of the muscles.

CASE IX. This patient was a girl, Mary D., aged 16, admitted November 26, under the care of Dr. Page. On admission she was in a frightful state of chorea, all the muscles of the body being perpetually in action.

December 7 she was still in the same state, no treatment apparently doing any good. The chorea was constant, day and night, and the movements were so violent that she could hardly at times be kept in bed. At this time she was much more emaciated than when she came in, and sordes were beginning to collect about the lips; she had not slept for three days or nights; and it seemed now that if sleep was not procured she must die of exhaustion.

At 11 P.M., the movements of the arms being for a moment restrained, I injected one-third of a grain of morphia into the cellular tissue of the neck near the clavicle.

From that moment the violence of the spasms gradually abated, and in fifteen minutes she was in a sound sleep, and snoring. The chorea completely stopped the moment she slept. In three-quarters of an hour she woke up, and was then as bad as before.

At half-past 2 A.M. I injected half a grain of morphia, as the effects of the preceding dose had completely gone off some time; muscular action quieted instantly; she was dozing in two, and slept in four minutes; she continued to sleep three hours.

On December 8 the chorea was as bad as ever. Sordes about the lips increased; pulse very weak. In the evening I injected one-third of a grain of morphia; she dozed in seven minutes and had a little sleep, and the spasms were quiet for half an hour after it. At 1 A.M. I injected half a grain, and, as in the preceding night, she was asleep in four minutes, and did not wake for six hours and a half.

After the 8th I found that the introduction of half a grain of morphia into the arm would always and instantly quiet the spasms for several hours; and three-quarter grain doses would give her sleep. For a few days she considerably improved, evidently owing to the sleep she obtained, and the cessation and quieting of the spasms; she took food better, and the sordes on the lips disappeared; but she ultimately died from exhaustion, and rapid wasting accompanying the formation of foul abscesses in the cheek and throat.

Case X. *Tetanus.*—William D., aged 60, was admitted in St. George's Hospital, November 5, 1858, with a gunshot wound of the thigh. On the 13th, he had a little wandering delirium; on the 14th, trismus and other symptoms of tetanus supervened, and gradually increased during the two following days.

16th. Has had no good sleep since the spasms came on. At half-past twelve three-quarters of a grain were injected in five drops of liquid; he was asleep in twenty-five minutes, and remained asleep for the greater part of the night, totally undisturbed by the tetanic spasms, which recurred nearly every minute the whole time he was asleep.

The progress of the case did not appear to be affected by this treatment, which certainly procured sleep, but had no effect upon the spasms, from which death finally resulted.

Remarks.—In Cases IX. and X. it is interesting to observe, that sleep followed the injection of the narcotic, but that the effect on the spasms was not the same in both; for instance, in the girl, the dose being injected, muscular action instantly became more quiet, and sleep generally resulted in about four minutes, no spasms taking place while the sleep lasted; and, in all probability, life was in her prolonged by the sleep obtained, and the quieting of the spasms. On the contrary, in the man with tetanus, although the brain was speedily quieted, and sound sleep of some hours procured, no effect at all was produced on the spasms, which recurred every minute during the night. May not the persistence of muscular action during sleep be a guide as to what spasms are cerebral and what spinal—especially with regard to chorea, looked on by some as an affection purely of the spinal marrow?

In such cases as tic douloureux, sciatica, and constant or occasional pains of the nerves, a cure may follow a single injection, or if not, more or less benefit will in all probability be effected. I have had no case in which some benefit was not produced. But from the cases of this description that I have had under my care, I cannot find that localization of the injection adds at all to the cure, except in those cases in which the mind of the patient has something to do with it, and there is a confidence alone in the local treatment. From the following case the non-necessity of localization will be made apparent.

Case XI. *Sciatica.*—In this patient the sciatica was in the left leg, but all the injections were made in the cellular tissue of the right arm. J. D., aged 70, was admitted November 24, 1858, in St. George's Hospital, under the care of Dr. Page. He had been subject to gout, and for a fortnight, before and after admission, suffered day and night from pain in the region of the left sciatic nerve. He was treated with morphia and colchicum, and then with salines and hyoscyamus, without the least good effect.

December 6. I injected half a grain of morphia into the right arm at 9.30 p.m. At 9 45 I returned to the ward he was in, and found him sound asleep; and he slept all night.

7. He has no pain at all in the leg.

11. Still has no pain in the leg; he is not now restless at night but sleeps well.

12. The pain has come back again, and owing to it he had no sleep last night. I injected half a grain of morphia again in the arm; he lost the pain immediately, and was asleep in a few minutes, and had a "beautiful night."

18. Has again had no pain for six days, till to-day; injection repeated in the arm.

This patient, from having the pains day and night, was made "well," to use his own expression, for seven or eight days together, by a single injected dose of morphia, whereas narcotics by the stomach had done no good.

Case XII. *Sciatica.*—Another patient with this affection, on whom, by Dr. Page's kindness, I tried this treatment, went out cured after five injections. This patient had also taken colchicum, morphia and other medicines, by the stomach, without effect. With regard to the part injected, I twice localized the treatment in the sciatic region, and three times injected the arm, the patient each day becoming freer from pain, and stronger in his walk.

I understand that the sciatica in this patient has since returned, but not so badly as to occasion him to become an in-patient of the hospital.

Tic Douloureux.—In this affection I believe that great benefit, if not a cure, generally attends the hypodermic introduction of narcotics; but that the localization of the treatment to the neuralgic part is necessary, I do not believe, as I stated in this journal six months ago, nor have I since then found reason to change my opinion. The following case is to the point:—

Case XIII. *Tic Douloureux.*—A lady, suffering acutely from neuralgia of many months' standing, sent for me to employ this treatment. She had taken hyoscyamus, opium, and morphia, internally, with no effect on the neuralgia; but they all, more or less, affected her head. She had also tried the endermic application of morphia. She found the endermic method, which was employed over the part affected, give her more relief than the administration of the narcotic by the stomach; but the effect lasted only a few hours, and she was as bad as ever the next day. The situation of the tic was the side of the face and head.

I injected a little more than half a grain of morphia into the arm; giddiness came on in three minutes, followed by considerable sickness, and subsequently by sleep. The pain ceased at the time, and has never since returned;* it is now between three and four months since the dose was injected.

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* In Edinburgh chiefly, and also in London, I am told that the sickness following the injection of narcotics is often excessive, and has, consequently, caused the treatment to be less adopted than it otherwise would. In all the cases in which I have employed the narcotic injection I have only once found urgent sickness produced, viz., in the case given above; and here the cause of sickness may partly be explained thus: that the patient was a woman of highly nervous temperament, and badly affected by narcotics, however administered. The amount injected has also something to do with it. In the usual way I think the stomach is saved disturbance and irritation by the injection of the cellular tissue, (which is the part I always inject;) and for these reasons: 1. That I have so seldom found sickness at all as a consequence. 2. Because in one patient accustomed to 30 or 40 grains of morphia daily for years, the tympanitic and disordered state of the stomach recovered itself while the hypodermic injection was gone on with, and which never once caused sickness. 3. Because, in one well-marked case, all narcotics administered by the stomach caused sickness, which was never the consequence of an injected dose; which latter, if small, quieted, and if large, caused good sleep.

The non-localizing plan has this advantage, that no abscess results in cases where several injections are required; for example, in a patient with severe neuralgia of many years' standing, I at one time employed the injection three times a day, varying the site each time. The patient was cured, and had no abscess whatsoever in the parts injected. Another patient, with tic douloureux, who *would* have the injection employed locally, had considerable tenderness, and some inflammation, as the consequence. The non-localizing plan, employed subsequently, caused no irritation.

It may be observed, that in the cases recorded I have always employed morphia as the narcotic to inject; I have employed it far more frequently than any other; but have also used the following, and chiefly in neuralgia:—

Evaporated tinct. of opium; tinct. aconite; tinct. cannabis indica; concentrated liquor opii sedativus, (prepared by Bullock;) sulphate of atropine, and chloroform.

The solutions I prefer are those of morphia and atropine, and the evaporated tincture of opium, (from one part to a third or fourth,) by which means the spirit is got rid of.

How it is that these narcotics are so rapidly and effectually injected into the cellular tissue, I intend considering at some future time, and also to bring before the profession the result of further experiments on animals with other anodyne and anæsthetic agents.—(*Med. Times and Gazette*, March 5, and April 16, 1859, pp. 234, 387; *Braithwaite's Retrospect*, part 39, p. 56.)

3. ON SOME POINTS IN THE TREATMENT AND CLINICAL HISTORY OF ASTHMA. By *Hyde Salter, M.D., F.R.S.*, Assistant Physician to Charing Cross Hospital.—One of the commonest and best-reputed remedies of asthma, one that is almost sure to have been tried in any case that may come under our observation, and one that in many cases is more efficacious than any other, is strong coffee. To the question, "Have you tried strong coffee?" the asthmatic is pretty sure to answer "Yes:" and he is also pretty sure to add that it gives him relief.

About the *modus operandi* of this remedy I was long puzzled; I could not make it out; and it is only lately that I think I have stumbled upon it. The *rationale* of its efficacy is, I think, to be found, on the one hand, in the physiological effects of coffee,—the particular nervous condition that it produces,—and, on the other, in a feature in the clinical history of asthma which I have long observed, and of which I think the efficacy of coffee is highly corroborative.

This fact is, that sleep favors asthma—that spasm of the bronchial tubes is more prone to occur during the insensibility and lethargy of sleep than during the waking hours, when the senses and the will are active. I have already referred to this in my observations on the "Clinical History of Asthma," in explaining why the paroxysm invariably (or almost invariably) chooses the hours of mid-sleep for its onset. Let me just refer to this subject again; for it is both interesting and important, as it explains a curious and very constant phenomenon in asthma—the hour, namely, of the attack—is highly illustrative of its pathology, and furnishes the key to some of its treatment.

I think, then, that sleep favors the development of asthma in two ways—

1. By producing insensibility to respiratory arrears.

2. By exalting reflex action.

The way in which sleep favors the development of asthma, by producing insensibility to respiratory arrears, and exalting reflex nervous action, I have already sufficiently explained in the papers on the Clinical History of Asthma to which I have referred.

There can be no doubt that sleep does exalt reflex nervous action. It is a fact so abundantly inculcated by the history of disease as hardly to require illustration or proof. The phenomena of epilepsy, cramp, lead tremors, and other examples of deranged muscular action, all teach it. It is just as sleep comes on, just as the will is laid to rest, or during sleep, that these different forms of involuntary muscular contraction most commonly occur. Any one, to convince himself of it, has only to fall asleep sitting on the edge of his chair, in such a position that it shall press on his sciatic nerves. As long as he is awake his legs will be motionless; but the moment he falls asleep they will start up with a plunge and suddenly wake him. As soon as he is awake they are quiet and still again, with no disposition to start, till he again falls asleep, and that moment they start again and wake him; and so he may go on as long as he likes. He changes his position, sits back in his chair, and they start no more. I need not explain what so clearly explains itself. I heard, some years ago, of a case of what might be called chronic traumatic tetanus, in which the source of irritation —the excito-motory stimulant—was extensive disease of the hip-joint. The moment the patient fell asleep he was seized with opisthotonos, which, of course, immediately woke him. On awakening, the tetanus vanished; on again falling asleep, it reappeared; and this alternation of falling asleep and waking continued for weeks, if not for months, the patient getting no continuous rest, till he was quite worn out. As long as he was broad awake the tetanus never appeared.* Hosts of similar facts, illustrative of the same truth, might be cited.

Anything that exalts reflex nervous action increases, of course, the potency of reflex stimuli. Now, I have elsewhere endeavored to show that the phenomena of asthma are, in almost every case, those of excito-motory action, and that the exciting causes of asthma are, in the great majority of instances, such as act by a reflex circuit. They would, therefore, on the asthmatic's falling asleep, immediately acquire a potency they did not before possess, just as the pressure on the sciatic nerve did, in the illustration I have given. Thus it is we see that the asthmatic may gorge himself with unwholesomes, and yet, as long as he keeps himself awake, suffer no consequential asthma;—the irritant is there, the undigested food is in the stomach, but as long as he is awake, as long as the will is dominant, it is inadequate to the production of reflex phenomena. But let him fall asleep, and in an hour or two the paroxysm will be established.

And not only will sound sleep determine, by this exaltation of reflex susceptibility, the production of asthma by its exciting causes, but a small dose of the same condition—sleepiness, drowsiness—will favor the supervention of asthma in a proportionate degree. Not only is drowsiness a premonitory sign of an attack, but a powerful predisposer to it; and the asthmatic knows that he yields to it at his peril. I have often noticed in asthmatics that the sleepiness that is so apt to come on after dinner will be accompanied by a slight asthmatic oppression and wheezing: as the drowsiness deepens, so does the asthma, and in this way it may settle down into an attack; but if the patient rouses himself, or if anything occurs to engross his attention so as to wake him up, broad awake, the asthma quickly vanishes. It is in this way, I think, that is to be explained the fact that asthmatics can dine out late and unwholesomely with impunity; while, if they dine at the same time and the same way at home, asthma is sure to come on. At home they want that excitement which at a dinner-party keeps the animal functions in a state of exaltation and the mind vividly awake, and effectually banishes the least approach to drowsiness. Of the fact there is not the slightest doubt. I know an asthmatic who can with impunity dine out at seven o'clock, as dinner-eaters of the nineteenth century are apt to dine—shirk nothing from soup to coffee—walk home at ten o'clock, a distance perhaps of four miles, with the wind of a deer-stalker—go straight to bed, and get up the next morning scathless; but if he were to dine at home at six, or even at five o'clock, he would be wheezing at nine, and by four the next morning downright asthmatic.

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* I was further informed, respecting this case, that, after everything else had failed, sleep was procured, with an immunity from the tetanic spasms, by putting the patient into the mesmeric state. In this way he got rest, and greatly improved; but what was the ultimate issue of the case I do not know.

I believe a certain amount of the curative influence of fright, or other strong mental emotion, is to be explained in the same way.

"But why," it may be asked, "all this roundabout digression? What has all this to do with the curative influence of coffee?" I believe it is simply its explanation. For, what are the physiological effects of coffee? They consist in the production of a state of mental activity and vivacity, of acuteness of perception, and energy of volition, well known to those who have experienced it, and to a certain extent very pleasurable, and which is the very reverse of that abeyance of will and perception which, in drowsiness or sleep, so favors the development of asthma. In sleep, will and sense are suspended; after taking strong coffee, they are not only active, but exalted. It produces rapidity of thought, vivacity of spirits, clearness of apprehension, increases tenfold the working powers, and altogether intensifies mental processes. Not only is there no disposition to sleep, but sleep is impossible: the thoughts hurry one another through the mind; the bodily movements are energetic and rapid; and if the effects of the drug are pushed far, a very unpleasant condition is produced, something like that of delirium tremens, *minus* its hallucinations. Now, if the suspension of the will, or its depression, favors the production of excito-motory phenomena, and thus favors the development of asthma, is it unreasonable to suppose that its exaltation should prevent or cure it? It must do so—if not positively, at least negatively, by removing the predisposing condition. And bearing in mind this marked physiological effect of coffee—that this exaltation of the animal nervous function is exactly what it produces—it certainly does seem to me reasonable to suppose that this is its *modus operandi*. And if of coffee, then of strong tea, and alcohol, and ammonia, and ether, and other stimulants of undoubted value in asthma.

To show that this is the *rationale* of the cure of asthma by stimulants, I do not think it is necessary to show that it is only when the asthmatic is drowsy, or has been sleeping, that they do good. If anything that rouses the asthmatic to a state of wakefulness will put a stop to asthma that was creeping on him while he was sleeping or sleepy, *a fortiori* anything that carries him beyond a state of mere wakefulness—that gives him an active, not a mere passive wakefulness, will be still more efficacious, and will be adequate to the checking of an attack that, in spite of his being broad awake, was gaining on him.

The very frequency with which coffee gives relief, makes it hardly worth while for me to narrate the history of any cases. I should think, from my own experience, that coffee relieves asthma in two-thirds of the cases in which it is tried. The relief is very unequal, often merely temporary, and sometimes very slight: sometimes it is complete and permanent. It is often taken in the morning; and patients will tell you, that previous to taking their coffee they are not fit for anything—can hardly move about; but that taking it is immediately followed by freedom of breathing, and an ability to enter at once on their daily occupations.

There are two or three practical hints with regard to the administration of coffee that are worth bearing in mind.

1. It cannot be given too strong. Unless sufficiently strong to produce its characteristic physiological effects it does no good, but rather harm; moreover, if given very strong it need not be given in much bulk, and quantity is a disadvantage—its effect is less rapid and it oppressively distends the stomach.

2. I think it is best given without sugar and milk—pure *café noir.*

3. It should be given on an empty stomach; if given on a full stomach it often does great harm, by putting a stop to the process of digestion: indeed, so much is this the case, that I consider coffee accompanying a meal, especially late in the day, so peculiarly apt to induce asthma that it deserves to be classed among its special provocatives. I have mentioned elsewhere the case of an individual who never dared to take the usual after-dinner cup of coffee—it would make the simplest dinner disagree with him. But the same asthmatic found in strong coffee, on an empty stomach, one of his most valuable remedies.*

4. For some reason or other, I don't know why, it seems to act better if given hot—very hot.

I adverted just now to the influence of mental emotion on asthma, and stated my belief that its *modus operandi* was, like that of coffee and other stimulants, by producing an exaltation of sense and will—an intense activity of the intellectual part of nervous action—and proportionately lessening the tendency to excito-motion; and this it does to a much greater degree than stimulant remedies, and its effects are, therefore, proportionately more sudden and complete. It was, indeed, the curative influence of violent emotion, and the observation that it and coffee taking alike banish that condition in which asthma is most prone to come on, that first suggested to my mind the theory of the action of stimulants on asthma that I have just endeavored to propound. I think, too, that mental emotion acts, if I may so express it, as a nervous derivative. There are many phenomena, both in health and disease, that seem to show that only a certain amount of nervous activity can be in operation at a certain time, and that if a nervous action of one kind comes into operation, another that had been previously going on is immediately depressed or arrested. Such is the explanation of the well-known experiment of the two dogs, one of which was taken hunting immediately after a meal, while the other was allowed to sleep. In the one that was taken hunting, digestion, on its return, was found hardly commenced; in the other, it was completely over, and the stomach empty. In the sleeping dog the whole vital dynamics, not being otherwise employed, were appropriated by the function of digestion; while in the hunted dog they were entirely taken up by its energetic locomotion, and drafted away, as it were, from that nervous superintendence of digestion without which the function cannot be carried on.* The power of strong emotion, or hard study, in retarding digestion, is an analogous fact. Just in the same way, I think, the extraordinary activity and exaltation of thought and perception that characterize the state of mind that the taking of coffee, ether, and other stimulants produces, acts as a nervous derivative in asthma, and diverts from the nervous system of the lungs that morbid activity which engenders the spasm of the bronchial tubes.

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* Since writing the above I have received the following account, from an asthmatic gentleman, singularly confirmatory of my own observations:—

"I used to think," writes my informant, "strong coffee the best of all remedies. I remember one instance especially, only a pattern of many others, but more striking when told. With bent back, high shoulders, and elbows fixed on the chair-arms, I had been laboring for breath all the afternoon. About five o'clock I had two breakfast-cups of strong coffee. The hard breathing disappeared rapidly and completely. My sisters were dancing in the next room, and in less than an hour I was dancing with them, quite free from asthma.

"Of late, coffee has often had an opposite effect upon me. The after-dinner cup of coffee, to which I have been for several years habituated, now produces a sensation of stuffing of the chest, and incapacity of moving about. I believe this is because it stops digestion; and the reason I did not suffer for some years I take to be, that my originally most excellent and enduring stomach could stand it so long, and no longer. Coffee, on an empty stomach, I still deem a most valuable remedy. I do not share the prejudice against putting milk and sugar into coffee that is used as a medicine, provided that it remain *café noir*, and be not made *café au lait.*"

The cure of asthma by violent emotion is more sudden and complete than by any other remedy whatever; indeed, I know few things more striking and curious in the whole history of therapeutics. The remedy that stands next in speed and efficacy—tobacco pushed to collapse—takes time, a few minutes at least: but the cure of asthma by sudden alarm takes no time; it is instantaneous—the intensest paroxysm ceases on the instant. This is a fact so little known, as far as I can see, and yet so practically important and theoretically interesting, that I think it will not be unprofitable if I endeavor to impress it more deeply by the narration of some cases of its occurrence.

CASE I.—A gentleman suffering an unusually severe attack, so bad that he had been unable to speak or move all day, was suddenly alarmed by the illness of a relative: he ran down two flights of stairs and up again, and administered the restoratives he had procured, and then observed, to his astonishment, that his asthma was gone. This gentleman tells me that on many other occasions different forms of mental emotion have cured his asthma.

CASE II.—C. R., a confirmed asthmatic, states that when he was suffering from an unusually severe attack, a fire occurred just opposite his house. Previous to the occurrence of the fire he was in bed, breathing with the greatest difficulty, and unable to move. When the excitement of the fire was over, he found that he had been standing in his night-shirt, looking, with the rest, out of the window, and that he had quite forgotten all about his asthma. His breath was not quite well the rest of the day, but nearly. On another occasion, when he was suffering from an attack, some sudden anxiety arose about two of the members of his family being out late: the alarm from which he suffered relieved his asthma, but not so suddenly as in the case of the fire. On another occasion, a sister of his was seized with sudden illness that seemed to threaten suffocation: he was suffering severely from asthma at the time, and was in bed; he jumped out of bed in great alarm, and found then that his asthma was perfectly cured. He was sufficiently well to run for a doctor, and continued well throughout the day.

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* See Dr. John Reid's experiments, in Todd's Cyclopedia of Anatomy, vol. iii. p. 899; also those of Bernard and of Bischoff, in Müller's Archiv., 1843.

Case III —Not long ago I was informed by a patient at the hospital, who had suffered greatly for many years, that however severe an attack might be, venereal excitement would almost invariably cure it. He told me also, that, when a youth, he had been guilty of the practice of onanism, and that the unnatural excitement thereby produced had just the same curative effect on his asthma, Indeed, he pleaded this effect of it as a sort of excuse for the practice; and assured me that when his breath was very bad at night he used to resort to it for the purpose of curing it.

I have known two or three cases in which sexual excitement has had just the same effect.

Case IV.—The following account of the curative influence of mental excitement I have received from a medical friend, who has suffered from asthma all his life:—"On one occasion I was sitting with fixed elbows on a sofa, breathing hard: a lady came into the room whom I had known very well, and whom I had not seen for several years. I got up to receive her, and sat down again on a music-stool; with no special purchase, therefore, for the respiratory muscles, and yet with comparative ease of breathing. This ease lasted for about an hour, and then the difficulty of breathing come on again. I attribute the temporary amendment to the diversion of nervous energy. Just the same thing has happened to me more than once. On another occasion I was suffering a good deal at a farm-house. I got on horseback with some difficulty, and an anxious hope that the horse would go quietly, to fetch myself an emetic from a town three miles off. The horse ran away with me. I pulled in, at first weakly and almost despairingly, but the need of exertion brought the power: after a run of about a mile I succeeded in pulling up, and was delighted to find my asthma gone.—Another time I was breathing very hard, and a friend engaged me in an argument. At first I could only get out a sentence in successive gasps; but gradually, as I got excited, the hard breathing went off, and I could talk fluently."*

From the foregoing observations, then, I think we may conclude—

That, since the abeyance of the will favors, in proportion to the degree of that abeyance, the development of asthma, and since the effect of strong coffee is to dispel such suspension or depression of volition, and restore the will to its wonted (or even an unwonted) activity, it is by thus exalting the will, and so disfavoring the development of excito-motory action, that this remedy relieves asthma.

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* For additional cases of the cure of asthma by mental emotion, I must refer the reader to a paper on the Pathology of Asthma, in the British and Foreign Medico-Chirurgical Review for July, 1858.

That the same interpretation applies to the relief of asthma by all other stimulants whatever.

That thus strong coffee and mental excitement, although apparently so different, belong to the same category of remedies for asthma.—(*Edinburgh Medical Journal*, June, 1859.)

4. A CASE OF HÆMOPTYSIS, ENTRANCE OF AIR INTO THE VEINS AND DISCHARGE OF AIR BY A VENESECTION. By *M. Piédagnel*, Physician to the Hôtel-Dieu. (*L'Union Médicale*, 1859, No. 45.)—A gentleman, aged forty-two, of vigorous constitution and strong muscular development, had been affected for four years with a spinal disease, which, however, disappeared under treatment. For two months before coming under treatment he had influenza, with much cough, and occasional violent efforts at expectoration. On the 18th of February, 1858, while coughing, he suddenly fell down insensible, and discharged a considerable quantity of blood. The hemorrhage ceased, but consciousness did not return. When seen by M. Piédagnel he was lying on his back, perfectly insensible, face pale, eyes immovable, pupils the same, but distended; hearing gone; no movement or sensibility. The whole skin pale, and insensible to stimulants. Respiration noisy, but does not resemble that of cerebral congestion, being active in inspiration, and at the end of expiration as in very feeble children. There was a slight râle on the right, but a strong and very moist one to the left; the percussion was less clear on the left, but no dullness either before or behind. Percussion of the cardiac region only causes a doubtful dullness; on auscultation a dull, but tumultuous sound of the heart-beats was heard. The radial arteries were imperceptible; all the subcutaneous veins were empty. The diagnosis was doubtful; it could not be apoplexy; it might be laceration of the veins or rupture of the heart.

A variety of stimulants were applied; after about half an hour there were symptoms of returning animation; the cutaneous circulation reappeared. A venesection being proposed by M. Vivier, was performed on the median-basilic vein. A little blood dribbled out; to the great surprise of the by-standers bubbles of air were then seen to issue from the opening in the vein, at first one, then several, passing put so as to form a sort of wreath on the skin, between the opening in the vein and the lower part of the forearm. On the blood and the air ceasing to flow, some light frictions along the course of the vein caused a new issue of air-bubbles; two, four, eight, issued successively, then the flow stopped; the frictions were repeated several times; all precautions were taken to avoid error, and each time the same result ensued. At last blood and air ceased to appear; the patient did not improve, and death took place soon after. No autopsy was allowed. But the physicians were of opinion that a rupture of the lung had taken place, causing an entrance of air into the blood-vessels.—(*British and Foreign Medico-Chirurgical Review*, July, 1859.)

5. ON PUNCTURE OF HYDATID CYSTS OF THE LIVER WITH THE CAPILLARY TROCAR. By *Dr. J. Moissenet*, Physician to the Lariboisière Hospital. (*Archives Générales*, Fevrier, Mars, Avril, 1859.)—Having had the misfortune to lose a patient affected with a considerable hydatid cyst of the liver by peritonitis, resulting from a palliative puncture with the capillary trocar, the author enters upon a minute inquiry relative to the different methods which have been employed for the purpose of evacuating the liquid contents of the tumor and the subsequent destruction of the hydatids. He finds that experience justifies the simple puncture, provided there is no escape of the fluid contents into the peritoneal cavity. Récamier, Legroux, and Laugier, Owen Rees, Aran, Boinet, Robert, Cloquet, and others, have obtained successful results by puncture with a fine trocar. Cruveilhier, in speaking of Récamier's practice, warns against its general employment, unless adhesions can be proved to exist and the tumor presents a decided tendency to push outward. Dr. Moissenet brings forward several other cases besides his own which proved fatal. The first series of general conclusions that his analysis brings him to are:—

1. That the hydatid liquid, whether limpid or puriform, when poured into the peritoneum, whether as the result of accident or of an operation, induces acute or chronic inflammation, which is almost always, if not invariably, fatal.

2. That capillary puncture, though commonly not injurious, may induce effusion into the peritoneum of hydatid fluid, when there are no adhesions between the cystic and abdominal parietes; and that this effusion has taken place when the puncture has been made for exploration or palliation only; that is, when the cyst has been imperfectly emptied.

3. That the puncture of hydatid cysts, whether made with a capillary or an ordinary-sized trocar, may prove fatal by inducing inflammation of the cyst itself.

The second series of conclusions drawn by Dr. Moissenet are:—

1. That capillary puncture of a hydatid tumor, made even without the existence of adhesions, may be curative, when followed by as complete an evacuation of the liquid as possible.

2. That this result may be obtained by a single puncture, or by two or three successive punctures.

3. That the treatment commenced by capillary puncture must sometimes be completed by another method, as in the case of Dr. Owen Rees,* in which a larger trocar was used at the third puncture, and a gum-elastic sound left in the orifice.—(*British and Foreign Medico-Chirurgical Review*, July, 1859.)

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* Guy's Hospital Reports, vol. vi., October, 1848.

Editors' Table.

FEES FOR PROFESSIONAL SERVICES.—The remuneration for medical, surgical, and obstetrical services have, of necessity, varied very much in different ages and countries, according to the estimate of the services rendered, or the relative value of money. In many countries, towns, and cities there are regular fee-bills, regulating the charges for ordinary practice; a custom which we have always regarded as absurd and unjust, since it places, in this particular, all practitioners, whatever may be their respective merits, upon the same level, whereas every man should be permitted to charge according to his skill and the nature of his services, not forgetting the circumstances of his patients.

In looking, not long ago, over some of our papers, our eye chanced to light upon a bill for professional services rendered by the late Dr. James Craik to Captain G. S., of Washington City, the father of a large and highly respectable family, to one of the members of which we are indebted for this interesting document. Dr. Craik was the physician of Washington, and attended him in his last illness, in conjunction with Dr. Dick. The bill is dated 1795, beginning in April of that year, and ending in March, 1799, the entire amount being £66 16s. 6d. It covers more than ten pages of foolscap, and particularizes every item with the same care as a merchant's or grocer's account. The following extract will serve as a specimen of Dr. Craik's charges:—

	£	s.	d.
For extracting Peter's tooth	0	3	0
Visit to your lady, and anodyne draught	0	3	0
Vial of diaphoretic drops for your son George	0	3	0
A purge	0	1	3
An emetic	0	1	6
For bleeding Capt. S.	0	3	0
“ delivering your lady	5	0	0
Visit to your son George, and vermifuge pill	0	1	3
32 syphilitic pills for Sam	0	16	0
Visit to your child Harriet, and 2 alterative powders	0	2	0
Visit to your son George, and vermifuge pill	0	1	3
8 ounces of injection for boy Sam	0	5	0
One syringe	0	3	0
Dressing negro boy's hands	0	2	6
Visit to your lady, and anti-rheumatic tincture	0	3	0
Visit to your lady, and opening abscess in breast	0	5	0
Blistering plaster	0	5	0
Bleeding	0	3	0
12 febrifuge powders	0	6	0
6 ounces best olive oil	0	2	6
Bleeding negro woman	0	3	0
“ Master George	0	3	0
Dose of salts	0	1	6
Inoculating your child	1	0	0

Emetics, purgatives, absorbent powders, anodyne draughts, and preparations of bark—powder and infusion—are prominent items of the account.

The custom of presenting items in medical bills has, we presume, become obsolete. It is certainly inconsistent with the dignity of a professional man of the present day to descend to such minutiæ. A round statement in dollars should be quite sufficient. Only once, in our whole life, have we been requested so to demean ourselves. We replied, that it was contrary to the habits of professional gentleman to specify their charges, with the minute exactness of an auctioneer's catalogue, at the same time that we informed our *patron* our ledger was at his service; nay, furthermore, that if in future he wanted our attendance on such conditions, he could not have it. The *creature*, now one of the merchant princes of the city where we then resided, had all his life been dealing in sugar, molasses, and whisky, and could therefore not help following the force of his habits.

Professional services are generally much more highly appreciated in cities and large towns than in the country. In the United States, practitioners are much better rewarded in the South and Southwest than in the North and East; in the slave States universally much more liberally than in the free. The reasons for these practices are obvious. In towns and cities physicians could not live if their charges were not higher than they are in the country; and in the Southern regions of the United States money is much more plenty than among the same number of inhabitants in the North and East.

The highest fees for medical services in this country are paid at New Orleans, where the ordinary charge for a visit is from two to five dollars, while consultation services yield at the rate of from ten to twenty. At Charleston the first consultation fee, established by long habit, is $14.00, the subsequent ones being each $2.00. In this city the first consultation visit is usually $5.00, and those made afterwards $2.00 each. The fees of surgeons are generally, everywhere, higher than those of physicians.

Since our attention has been directed to this subject, we have examined a number of works in our library with a view of ascertaining the charges, ordinary and extraordinary, of practitioners, dead and living, in different countries and in different ages.

In ancient times some remarkable fees were obtained for professional services. It is related of Charmis, who kept a bathing establishment at Rome, in the reign of the Emperor Claudius, that his regular charge for advice to those who were anxious to avail themselves of his treatment was £800. He was the first water-cure doctor, if we may credit the researches of Dr. Doran, that ever practiced, and he made an immense fortune, such as no brother of the craft of the present day can at all approach.

The most liberal fee of modern times was that received by Dr. Dinsdale, a physician of Hertford, England, for inoculating the Empress Catherine, at whose request he visited Russia, in 1768. The operation was perfectly successful, and such was the gratification of the Empress that she made Dinsdale a baron of the empire, besides presenting him £12,000, and a pension of £500 a year.

The largest fee ever received by Sir Astley Cooper was 1000 guineas. His patient was a man of the name of Hyatt, a retired West India merchant, who was affected with stone in the bladder. The manner in which the fee was presented is worthy of notice. When Hyatt had entirely recovered from the effects of the operation, he requested his surgeon, with his two medical attendants, Dr. Lettsom and Dr. Nelson, to visit him on a particular day. Cooper arrived after the physicians had left the room; he met them down stairs, discussing the liberality of their patient, who had presented each with £300. Sir Astley was cordially received by the old West Indian, and after having chatted a little while, he rose to take his leave, and had got as far as the door, when Hyatt threw his night-cap at him, saying, at the same time, "There, young man, put that into your pocket." Upon examining it, he found a check in it for 1000 guineas.

Hyatt, it would seem, was equally liberal to his apothecary, or regular family attendant. One day, being sent for in haste to visit his patient, he fell down and hurt his knee, so as to cause him, on entering, to be lame. Hyatt, observing his condition, immediately exclaimed, "Dobson, old fellow, what is the matter?" On learning what the trouble was, he pulled out a £100 bank-note, and applied it to the joint, adding that it was the best plaster in the world for a bruised knee.

A wealthy London merchant, Mr. William Cole, paid Sir Astley Cooper annually, for years, £600, for attendance upon his family.

During the hey-day of his professional life Sir Astley Cooper frequently made 100,000 dollars a year by his practice. Much of this vast sum was received for chamber practice. He had to answer many letters of advice, for which he never received less than a one-pound note, while many yielded him five times that amount.

Dr. Lettsom, who was a West Indian by birth, made, in a visit which he paid to Tortala, his native town, soon after having completed his studies in London, nearly £2000 in five months. After he had succeeded in establishing himself in the British metropolis, his income annually ranged from 20,000 to 25,000 dollars. In 1800, he received, in fees, £12,000, or sixty thousand dollars.

Fothergill, the Quaker doctor, did an immense practice. For the last twenty-five years of his life, his fees annually averaged nearly £7000, or about 35,000 dollars. He commenced his practice in 1740.

Mead's income was, on an average, from £5000 to £7000, for many years. He once received 300 guineas for visiting a patient at Ingestree, in Staffordshire. The patient had been very ill, but recovered before the arrival of his great physician.

Dupuytren's income was enormous; he began life as a poor boy, and died worth more than a million of dollars. Graefe, the celebrated surgeon of Berlin, left an immense fortune, the result of his professional labors.

In this country, physicians are not noted for their high charges or great income. One of the largest fees ever received by any one was that of Dr. Ephraim McDowell for the operation of ovariotomy, performed upon a lady in Tennessee, whose husband gave him $1500. We have heard of a fee of $5000 being paid to a New York surgeon for an operation for club-foot, but we are unable to vouch for the authenticity of the story. Physick left a large fortune, but rather in consequence of the rise of his estate than of his large professional emoluments. His charges were generally small. A gentleman once handed him a hundred dollar note for attendance on his wife; but the doctor thinking that it was out of all proportion to the value of his services, returned all but ten dollars.

The salaries of court physicians and surgeons have also varied according to the times in which they flourished, and the respective ranks which they occupied. In the reign of Henry III. of France, the pay of the royal household staff was as follows:—

First Surgeon.

Ambrose Paré.......	666 livres and 12 sols.

Surgeons-in-Ordinary.

Pierre Pegray........	333 livres and 6 sols.
Antoine Portail......	333 " " 6 "

Assistant Surgeons, serving each three months in the year.

January, February, and March.

Jacques Guillemeau...............	100 livres.
Isaac Bruns...........................	100 livres.

April, May, and June.

Jehau Lambert.......................	100 livres.
Jacques D'Amboise.................	100 livres.

July. August, and September.

Ismael Lambert......................	100 livres.
Hierome De la Noue	100 livres.

October, November, and December.

Charles Buchalier	100 livres.
Michael Vandelon..................	100 livres.

Louis XIV. seems to have had a high appreciation of the services of his professional attendants. Being affected with anal fistule, an operation became necessary, on recovering from which he exhibited his gratitude by bestowing upon them not less than £14,700, in the following ratio :—

To M. Felix................	50,000	crownes	=	£6000.
" Dr. Duquin............	100,000	livres	=	4000.
" Dr. Fagon.............	24,000	"	=	1000.
" M. Bessiere	40,000	"	=	1500.
" Four apothecaries, each.....................	3000	"	=	2000.
" M. Raye, apprentice to M. Felix.....	400	pistoles	=	200.

Considering the enormous price paid for the operation, it is surprising that the filthy disease which it was designed to relieve should ever have become the fashionable court complaint. A surgeon at the present day may regard himself as extremely fortunate if he can occasionally get a patient who is able to pay him two hundred dollars for the division of the sphincter muscles, including the after-treatment.

Scanzoni, professor of midwifery in the University of Würzburg, received $25,000 for attending, a short time ago, the Empress of Russia in her confinement. The prestige with which the favorable reception of this physician at the Russian court invested him, has rendered him the most celebrated accoucheur of continental Europe, and laid the foundation of one of the most aristocratic practices in the world, crowds of the German and foreign nobility flocking to him from all parts.

Medical men sometimes receive, in addition to their regular fees, large presents, either in money, plate, clothing, or wine. Thus, Ambrose Paré, the father of French surgery, at the siege of Metz, in 1552, had a tun of wine sent to him for curing one of the officers of a broken limb, by De La Roch, with a promise that "when it was dronken he would send mee another." The Sultan recently, after his recovery from an attack of ague, in which he was obliged to take an unusual quantity of quinine, the effects of which occasioned symptoms which somewhat alarmed the court, presented his physician, Dr. Caratheodory, precious stones, works of art, and various other articles, valued at between £12,000 and £16,000, besides a handsome estate.

Physicians, on retiring from practice, are sometimes presented with a service of plate by their grateful patrons; and similar compliments are occasionally paid by towns, and cities, in consideration of the services rendered by practitioners during the prevalence of devastating epidemics.

Sometimes, again, the present is in the form of a wife. Thus, Podilirius, whose praises have been sung by Homer, was rewarded by the King of Caria with the hand of his daughter, whose life he was supposed to have saved by bleeding her in both arms, after a fall from the top of a house. Such a gift might not always be agreeable or convenient to the recipient, but it could hardly be otherwise when it comes in the form of a rich princess, as in the case of Podilirius.

Governments do not always reward their subjects in proportion to the value of their services. Jenner, for his immortal labors in vaccination, by which millions of lives have been preserved, received from the British Parliament the paltry sum of £20,000. Brossard, a French surgeon, in the seventeenth century, was richly rewarded by the French government for the disclosure that agaric would arrest hemorrhage after surgical operations. The remedy was tried, and, of course, found useless, though not until a number of lives had been lost by it. Mrs. Stephens, as late as the last century, obtained a large sum from the British Parliament for making known the supposed virtues of Castile soap and egg-shells in dissolving urinary calculi.

The charges for attendance at coroner's inquests are not commensurate with the services exacted upon these occasions. From ten to twenty dollars is the usual fee for making a dissection for the benefit of the public, and even that sum is often grudgingly allowed. In cases of poisoning the remuneration is, of course, more liberal, though seldom adequate. The largest compensation for services of this description ever paid in this, or, perhaps, in any other country, was that recently awarded by the City of New York to Dr. Doremus, Professor of Chemistry in the New York Medical College. The sum alluded to was $3000, besides $800 for the outlay of new apparatus. The case was that of Stephens, tried for the murder of his wife by poison. Dr. Doremus was obliged to analyze two entire bodies.

Finally, a good fee is a powerful stimulant, causing the most delightful sensations, and goading a man on to the most vigorous performance of his duties. It increases the pace of the sluggard, and improves the digestion of the dyspeptic. There is not a man in the profession that has not, at times, felt the force of the practice of the celebrated physician of Bath Finding himself no better for his own prescriptions, he laughingly observed to a friend, "Come, I think I will give myself a fee; I am sure I shall do better then." Putting his hand into his pocket, he took out a guinea, and gravely passing it to the other, he soon got well. Assuredly, reader, there is great potency in a good fee.

Physicians sometimes place no better estimate upon their services than their patients. A young professional acquaintance recently told us that, not long ago, after having prescribed for a female, she handed him a one dollar counterfeit note, which he did not hesitate to take although he knew at the time it was worthless, believing that it was a fair equivalent for his services. We have not examined our brother's organ of conscientiousness, but suppose it to be very large.

Letters of Advice.—It has been our lot, during the last twenty years, to receive an amount of letters of this kind—enough to fill the mouth of the crater of Vesuvius, and all the money we have obtained for our answers would not, all told, we are sure, enable us to buy a first-rate horse and buggy. If the time thus spent could be correctly estimated it could not possibly be found to be less than six or eight months, involving a vast amount of toil and inconvenience, to say nothing of expense, which, in the aggregate, must have been very great. We recollect paying for one letter, when the postage was twenty-five cents, half a dollar. It covered nearly ten pages of foolscap, giving the most minute and circumstantial details of a case that was not of the slightest interest to us in any way. Of course, that letter was sent to Gehenna long before one-half of it was read. To have done otherwise would have been impossible. If only our *friends* knew how these letters annoy and worry us, they would not, we are sure, so constantly inflict them upon us. What are their patients to us, that we should be compelled to read the tedious accounts of their cases, and, worse than all, answer their selfish lucubrations? Do they suppose that we have no other business? Verily, verily, gentlemen, we say unto you that such messengers are tolerable only when they inclose a proper fee. In England, and indeed throughout all decent Christendom, that fee is never less than five dollars, from which it ranges, in many cases, as high as twenty-five. The sight of a bank-note is always agreeable to one who is compelled to earn his living by the sweat of his brow; but especially is it cheering to him whose eyes and hands are weary and aching with the labor of writing books and furnishing materials for the pages of a medical journal. Besides, how can a man possibly discern the strong points in such a letter if he is not properly remunerated for his services? The expectation of a fee always wonderfully quickens a physician's sympathy and clearness of perception. We never answer these charity-letters without a feeling of distrust that our advice may be anything but salutary. If we had a benevolence as diffusive as that of a Howard we should rebel at labor and annoyance so ungenerously and so inconsiderately imposed upon us by the profession. A physician has no more right to ask such services gratuitously for his patients than he has to send for his professional brother in a case of ordinary consultation without the prospect of reward, when the patient is amply able to pay. A reasonable fee should always accompany the letter. The only exception to this rule is where a practitioner solicits advice for himself or some member of his family, or for a very destitute person.

ORATION ON HARVEY.—This oration, instituted many years ago by the College of Physicians of London, is still annually delivered in Latin, that illustrious body being evidently unable to extricate itself from a habit under which it has so long labored. The address, this year, was delivered on the 29th of June, by Dr. C. J. B. Aldis, and is represented as a highly finished production, distinguished by the grace and purity of its style. It strikes us on this side of the waters as very singular that so grave a set of men should make themselves so ridiculous by meeting, once a year, to listen to what very few, we suppose, really only partially comprehend, or which, if fully comprehended, could certainly be much better expressed in good classical English. We agree with our cotemporary, the London Lancet, that this custom would be honored more in the breach than in the observance, and that it shows anything but an evidence of progress.

UNIVERSITY OF THE PACIFIC.—Under this name, a name ominous we trust of its future harmony and prosperity, has recently been established, at San Francisco, the first medical school in California. The faculty consists of young, able, and efficient men, filled with zeal for the honor and advancement of medicine in our far-off sister State. We wish them all a happy and a prosperous career, and hope that the day is not distant when they may be able to build up an institution that shall be alike creditable to them and honorable to our beloved Union. Several of the members of the faculty of this new school have already earned an enviable reputation.

NEW MEDICAL JOURNAL.—We have received the first nine numbers of the *Journal de Progrès des Sciences Médicales et de L'Hydrothérapie Rationelle,* edited by M. Louis Fleury, with the assistance of an able corps of collaborators, among whom we notice such names as Malgaigne, Nélaton, Gosselin, Jobert de Lamballe, Piorry and others, a sufficient guaranty that the periodical will be sustained in a masterly manner. Dr. Fleury was formerly connected with *Le Progrès*, a journal which existed about eighteen months, during which time he made many bold and meritorious attacks upon charlatanism, for which he has had to defend four actions at law, two being decided against him. We gladly place his journal on our exchange list.

THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.—At a meeting held on the 14th of October, the following officers were elected for the ensuing year:—

President,	DR. STILLÉ.
Vice-Presidents,	DRS. LA ROCHE and EDWARD HARTSHORNE.
Treasurer,	DR. ADDINELL HEWSON.
Secretary,	DR. DA COSTA.
Assistant Secretary,	DR. JOHN K. KANE.

We are happy to add that the Society is in a highly prosperous condition; its meetings are well attended, and its discussions are very animated and instructive.

THE NEW SYDENHAM SOCIETY.—This Society, under the presidency of Dr. C. J. B. Williams, is now actively engaged in the exercise of its self-imposed labors of furnishing their professional brethren, everywhere, with the works of distinguished foreign authors, and also some of the older works of their own countrymen. We wish the Society all possible success in their laudable undertaking. The annual subscription is one guinea, for which members for the present year obtain the following five octavo volumes:—

Vol. I.—*Diday* "On Syphilis in Infants and Children at the Breast." Translated by Dr. Whitley.

Vol. II.—*Gooch* "On the most important Diseases of Women and Children," with other Papers. With Wood-cuts. Prefatory Essay by Dr. Ferguson.

Vol. III.—"*Memoirs on Diphtheria.*" From various French sources. Selected and Translated by Dr. Semple. With a Bibliographical Appendix by Mr. Chatto.

Vol. IV. comprises the two Works of *Professor Schrœder Van Der Kolk*, (1st) "On the Spinal Cord," and (2d) "On the Medulla Oblongata," and "On the Proximate Cause and Rational Treatment of Epilepsy." Translated by Dr. W. D. Moore, of Dublin. With numerous Lithographs.

Vol. V. will contain Translations of the following monographs:—

1st. *Kussmaul* and *Tenner's* "Experimental Researches on the Effects of Loss of Blood in inducing Convulsions." Translated by Dr. Bronner, of Bradford.
2d. *Wagner* "On the Resection of Bones and Joints." Translated by Mr. T. Holmes. Numerous Wood-cuts.
3d. *Professor Gräfe's* Three Papers on Glaucoma, Iridectomy, etc., etc. Translated by Mr. Windsor, of Manchester.

Works in preparation for 1860:—

Vol. VI.—*Clinical Memoirs on Abdominal Tumors and Intumescence.* By Dr. Bright. Collected and Reprinted from the Guy's Hospital Reports. Edited by Dr. Barlow. With numerous Wood-cuts.

Vol. VII.—*A Year-Book for* 1859. The Year-Book is designed to form a Register in condensed abstract of all important Contributions, whether British or Foreign, in Medicine, Surgery, and their allied Sciences during the year. It will consist of five sections:—

1st. Anatomy and Physiology. Edited by Dr. Harley.
2d. Medicine. Edited by Dr. Handfield Jones.
3d. Surgery. Edited by Mr. Hulke.
4th. Diseases of Women and Children. Edited by Dr. Graily Hewitt.
5th. Forensic Medicine and Toxicology. Edited by Dr. Odling.

Vol. VIII.—*Frerich's Clinical Account of Diseases of the Liver.* Vol. I. With Wood-cuts. Translated by Dr. Murchison, Assistant Physician to King's College Hospital.

An offer on the part of Professor Simpson, of Edinburgh, to edit, for the Society, a Reprint of *Smellie's Midwifery*, with Notes, bringing the work up to the state of present knowledge, has been gladly accepted by the Council, but it is uncertain whether this book will form part of next year's issue.

Hebra's Atlas of Illustrations of Skin Diseases.—Conditional arrangements have been made to commence the issue of selected Illustrations from Professor Hebra's magnificent and costly Atlas; but the expense will be such that the Council cannot undertake this work unless the Society's members for 1860 shall exceed 3000.

REMINISCENCES OF SAMUEL LATHAM MITCHILL, M.D., LL.D. By *John W. Francis*, M.D. etc., 1859. The friends and admirers of Dr. Mitchill may consider themselves as exceedingly fortunate in having so able and distinguished a biographer as Dr. Francis, whose glowing and eloquent pen has so forcibly and so beautifully portrayed the characteristic traits of that illustrious philosopher. There is no man in the country who understood Dr. Mitchill so thoroughly as Dr. Francis;

for many years they were on terms of great intimacy, and in almost daily communication, discoursing now upon medicine, now upon some branch of natural science, now upon government or politics, and anon upon the fine arts, philosophy, or divinity; like twin brothers, born not for each other merely, nor for their own generation only, but for all time. It was fit then that the survivor should render this homage to his deceased comrade; and no one can read these reminiscences without being impressed with the conviction that he has performed his task most worthily alike of himself and of his friend.

Dr. Mitchill was born in Queen's County, Long Island, New York, on the 20th of August, 1764, his father being a farmer, and a member of the Society of Friends. He received his medical degree in the University of Edinburgh, at a time when that institution was adorned by the talents and eloquence of a Cullen, a Black, a Duncan, and a Monro. Among his companions there were Casper Wistar, James Mackintosh. Richard S. Kissam, and Thomas Addis Emmet, worthy compeers of such a youth. Upon his return to America, he studied law, natural history, chemistry, mineralogy, geology, and ethnology, evidently thinking, like Adam Clark, that it was impossible for him to have too many irons in the fire. Not long afterwards he was appointed Professor of Agriculture and Chemistry in Columbia College, and of Natural History, Botany, and Materia Medica in the College of Physicians and Surgeons of New York. He aided in founding the Military Academy at West Point, established with Miller and Smith the New York Medical Repository, carried on a large correspondence with scientific men in various parts of the world, contributed numerous papers to different periodicals both at home and abroad, and performed an immense number of experiments, illustrative of various chemical, medical, and philosophical subjects. Besides all this immense labor, he was constantly engaged in benevolent enterprises. Prof. Mitchill was a man not only of great learning and research, but of an enlarged philanthropy, losing no opportunity of doing good. He had a strong perception of the beautiful in art as well as in nature; and often gave vent to his emotions in verse, replete with genuine taste and poetic imagery. His memory was wonderful, or, in the language of his admirable biographer, herculean. His personality may be gathered from the following paragraph:—

"In the prime of his manhood Dr. Mitchill was about five feet ten inches in height, of a comely, rather slender and erect form; in after life he grew more muscular and corpulent, and lost somewhat of that activity which characterized his earlier days. He possessed an intelligent expression of countenance, an acquiline nose, a gray eye, and full features. His dress at the period he entered into public life was after the fashion of the day, the costume of the times of the Napoleonic consulate; blue coat, buff-colored vest, smalls, and shoes with buckles. He was less attentive to style of dress in his maturer years, and abandoned powder and his cue. From a hemorrhagic tendency of his chest at the age of seventeen years, he adopted exercise on horseback, and was fortunate enough to avert the progress of pulmonary evils. His personality, however, varied in advanced life with the cogitations of his graver years, and he might at times be seen without hat or overcoat, exposed to the vicissitudes of inclement weather. His robustness preserved his full features, and to the last not a wrinkle ever marked his face, nor did lapse of years modify his thirst for knowledge, or his cordial and prompt and sprightly utterance; thus setting at naught the declaration of the poet,—

> 'Old age doth give by too long space,
> Our souls as many wrinkles as our face.'"

Dr. Mitchill died in September, 1831, in the sixty-seventh year of his age. His remains repose in Greenwood Cemetery, where a beautiful monument was erected to his memory by his still surviving widow. He never had any children.

CLINICAL REPORTS.—We propose hereafter to publish in every number of the Review a report of the more important and instructive cases in surgery that may fall under the observation of the senior editor at the clinic of the Jefferson College, at the Philadelphia Hospital, and in private practice. A gentleman well qualified for the task has been specially employed for the purpose.

CLOSE OF THE THIRD VOLUME OF THE REVIEW.—The present number terminates the third year of our editorial labors. In reviewing those labors we have every reason to be satisfied with their results. The Journal has gradually and steadily increased in usefulness and reputation, and has become one of the authoritative periodicals of the day, its pages being constantly referred to by all the leading journals in the United States and Europe. It has been the ardent desire of the editors to conduct the Review in such a manner as to render it worthy of the present enlightened state of the medical profession, and of the rising condition of our national medical literature, of which they have always been warm advocates. If, in their notices of native works, they have sometimes been obliged to assume the character of severe critics, they have the consolation to believe that their judgment has been generally approved by their professional brethren. They have never allowed themselves to be biased, in anything that has been thus done, by sectional feeling or jealousy. Their great endeavor has been to do justice to all; neither, on the one hand, to indulge in blind praise, nor, on the other, in unmerited condemnation. While their course has been one of great independence, leading sometimes to a bold expression of opinion, they have the gratification to know that the pages of the Review have never been sullied by one solitary personality. To their collaborators, who have so nobly sustained them in their efforts to build up an able and useful periodical, the editors tender their warmest acknowledgments, and confidently appeal to them for future support.

NECROLOGICAL NOTICES.

THE death of WILLIAM PULTENEY ALISON has caused an irreparable void in the medical as well as social circle. Greatly distinguished as a physician, and everywhere recognized as a man of sterling Christian principles and untiring philanthropy, his loss will indeed be deeply mourned.

Dr. Alison was born in 1790, of highly intelligent and cultivated parents, his father being a popular preacher and author, and his mother a daughter of Dr. John Gregory. In his youth, Dr. Alison evinced decided military propensities, but in compliance with his father's earnest entreaties soon abandoned them, and began the study of medicine under his uncle, the celebrated Dr. James Gregory, who then occupied the Chair of Practice of Physic in the University of Edinburgh. In 1820 he accepted the professorship of Medical Jurisprudence in the University, and afterwards succeeded Dr. Andrew Duncan, as Professor of the

Institutes of Medicine. In 1831 he published a synopsis of these lectures under the title of "Outlines of Physiology." A few years after he was unanimously offered the Chair of Practice of Physic, which he occupied most satisfactorily until 1855, when he was obliged to resign it on account of the weakened state of his health, produced by epilepsy, by which he was attacked thirteen years ago, during a visit to the Infirmary. These attacks recurred at unequal periods, shattering his naturally strong constitution, and causing its complete overthrow on the 22d of September.

During the intervals of his terrible disease Dr. Alison read both medical and scientific works and wrote constantly. His writings are so various and of so diversified a nature, that it would be futile to undertake their enumeration. Among the most remarkable of them, however, are his essays on the "Contagion of Fever," and on "Vital Affinity." He also greatly ameliorated the social condition of the people by his "Observations on the Management of the Poor in Scotland." His medical writings display wonderful research and reflection, and his language is always elegant and forcible, a talent shared by his brother, Sir Archibald Alison, the distinguished historian. He contributed many valuable papers to the *Cyclopedia of Practical Medicine*, and is particularly known by his "Outlines of Pathology," and "Outlines of Physiology," before mentioned. In 1858 he was elected President of the British Medical Association, at its meeting in Edinburgh; and the warmth of his reception proved how universally he was loved and respected. Above the many intellectual gifts with which he was endowed, and his high literary attainments, will be remembered his unfailing benevolence and kind, generous heart. His whole life was devoted to his profession, and he allowed nothing to interfere with its duties, often sacrificing to them his domestic and scientific pursuits.

Dr. Alison's wife died many years ago, and he leaves no immediate family to mourn his loss; but the tidings of his death will cause deep regret in the profession both of Europe and of this country.

Dr. Alison's life of seventy years was one of arduous toil, and successful mental and physical labor, and to him may well be applied the saying of Horace,—

> "Opere in longo fas est obrepere somnum."

DR. E. H. BARTON, late of New Orleans, died of disease of the heart, at Columbia, South Carolina, on the 20th of September. Dr. Barton was a gentleman of high distinction as a medical practitioner and as professor in the University of Louisiana, and was also well known for his scientific attainments, having contributed much useful information on the subject of yellow fever, especially in his report as Chairman of the Sanitary Commission of New Orleans. During the Mexican war he had the control of the hospital at Vera Cruz, where, from his earnest attention to the wounded soldiers, he commanded the respect and love of all who knew him.

DEATH OF MR. BRUNEL.—The death of this illustrious engineer, which recently occurred at London, at the age of fifty-three, has recalled to our recollection the great suffering which he endured, a number of years ago, in consequence of the inhalation of a half sovereign while engaged in amusing some children in a trick at legerdemain. He was a native of Portsmouth, England, and was a man of great industry and genius, as is proved by the fact that his name is associated with some of the most wonderful performances in machinery and architecture of the present century. The following is an abstract of Mr. Brunel's case, as recorded in the senior Editor's Treatise on Foreign Bodies in the Air-Passages, published in 1854:—

"On the 3d of April, 1843, Mr. Brunel, of London, in amusing some children, immediately after dinner, placed a half sovereign in his mouth, which by some accident slipped behind the tongue, causing a violent fit of coughing and choking, and the forcible ejection of the contents of the stomach. He strained two or three times afterwards, but did not again vomit. In the course of the evening he coughed at intervals, though not violently; and for the next twenty-four hours he complained of some stiffness and soreness in the throat. During the next two days, he experienced little or no inconvenience; he had no cough, and he employed himself as usual. On the 6th of April the cough returned, and on the 9th it became aggravated, apparently from exposure to cold. He expectorated some mucus slightly tinged with blood, and experienced a pain in the side of the chest, in the situation of the lower portion of the right bronchial tube. An aperient, followed by vomiting, greatly relieved these symptoms; but on the 11th of April, the cough was again troublesome, and on the 17th it was much increased by exposure to a cold, easterly wind. On the 19th, the patient was placed in the prone position, with his sternum resting on a chair, and his head and neck inclining downward, when he immediately had a distinct perception of a loose body slipping forward along the trachea. A violent convulsive cough ensued. On resuming the erect posture, he again experienced the sensation of a loose body moving in the trachea, but in the opposite direction—that is, toward the chest On the 25th, a somewhat similar experiment was made. At first, no cough ensued; but on the back, opposite the right bronchial tube, having been struck with the hand, the patient began to cough violently. The half sovereign, however, did not make its appearance. This process was twice repeated with no better result; and, on the last occasion, the cough was so distressing, and the appearance of choking so alarming, that it was evident that it would be imprudent to proceed further with this experiment, unless some precaution were used to render it more safe.

"On the 27th of April, tracheotomy was performed, and an attempt made, but without success, to reach the coin with the forceps introduced through the artificial opening. The contact of the instrument always induced the most violent convulsive coughing. The coin could not even be felt. On the 2d of May, these trials were repeated with the same result. Determined to desist from all attempts of this kind, the patient was permitted to rest until the 13th of May, when, being placed in the prone position, upon a platform made movable on a hinge in the center, the shoulders and body were fixed by means of a broad strap, and the head was lowered until the platform was brought to an angle of about 80 degrees with the horizon. The back was now struck with the hand; two or three efforts to cough followed, and presently he felt the coin quit the bronchial tube, striking almost immediately afterwards against the incisor teeth of the upper jaw, and then dropping out of the mouth. A small quantity of blood, drawn into the trachea from the granulations of the external wound, was at the same time ejected; no spasm in the muscles of the glottis took place, and there was none of the inconvenience and distress which had caused so much alarm on the former occasion. A speedy recovery was the consequence. It is worthy of remark that the stethoscope, which was repeatedly applied to the chest during the progress of this case, detected no difference in the state of the respiration."

Bi-Monthly Bibliographical Record.

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